HUMAN TELOMERASE

	•	•	•	•
60	CCTGCTGCGCAGCCACTACCGCGAG	TGCGCTCC	CCCTCCCGAGC	ATGCCGCGCGCTCCC
20	rLeuLeuArgSerHisTyrArgGlu	arargser.	DAIGCYSAIGAI	MecFloArgAlaPro
	•	•	•	•
120	GCCCAGGGCTGGCGGCTGGTGCAG	GCCTGGGG	LACGTTCGTGCG	GTGCTGCCGCTGGC
40	yProGlnGlyTrpArgLeuValGln	urgLeuGly	aThrPheValAr	ValLeuProLeuAla
	• • •			
180	CAGTGCCTGGTGTGCGTGCCCTGG	TGGTGGCC	GCTTTCCGCGC	CGCGGGGACCCGGCC
60	aGlnCysLeuValCysValProTrp	euvalata(ialarneargal	ArgGIYASPPTOAL
			•	
240	CAGGTGTCCTGCCTGAAGGAGCTG	الكالمسالا		GACGCACGGCCGCC
240 80	GlnValSerCysLeuLysGluLeu	erPheArg	ProAlaAlaPr	AspAlaArgProPro
80	, ormandered and agraned			
		•	•	•
300	GCGAAGAACGTGCTGGCCTTCGGC			
100	AlaLysAsnValLeuAlaPheGly	luArgGly/	ıGlnArgLeuCy	ValAlaArgValLeu
	•		•	TOCCCCCTCCTCCTCC
360	GAGGCCTTCACCACCAGCGTGCGC	GUUUUUUU	:GGGGCCCGCGG	TTCGCGCTGCTGGAC
120	GluAlaPheThrThrSerValArg	+35125100	GIYALAAFGGI	rnewighenremasi
			•	•
420	GGGAGCGGGGCTGCTG	CACTGCGG	LACGGTGACCGA	AGCTACCTGCCCAAC
140	GlySerGlyAlaTrpGlyLeuLeu	laleuArg(ThrValThrAs	SerTyrLeuProAsn
	, , , , , , , , , , , , , , , , , , , ,	-		
	•	•	•	
480	SCTGGCACGCTGCGCGCTCTTTGTG	TTCACCTGC	GACGACGTGCT:	TTGCGCCGCGTGGGC
160	LeuAlaArgCysAlaLeuPheVal	alHisLeul	/AspAspValLe	LeuArgArgValGly
	CCGCCGCTGTACCAGCTCGGCGCT			• ~TEGTGCCCTCCCTCC
540	ProProLeuTyrGlnLeuGlyAla	1010C3GGC	Cvellamvech	DECEMBER OF SEVERAL
180	FlorioLediyrGinLedGiyAla	archagras	.Cyshiaiyidi.	acavartar 10061
		•	•	•
600	CCCCGAAGGCGTCTGGGATGCGAA	CTAGTGGAC	CCCCCGCCACA	GCCACTCAGGCCCGG
200	ProArgArgArgLeuGlyCysGlu	laSerGlys	ProProProHis	AlaThrGlnAlaArg
	•	•	•	•
660	CCCCTGGGCCTGCCAGCCCCGGGT	CCGGGGTCC	'AGCGTCAGGGA	GGGCCTGGAACCAT
220	ProLeuGlyLeuProAlaProGly	iaGiyVal?	SerValArgGl:	ArgAlaTrpAsnHis
700	CCGTTGCCCAAGAGGCCCAGGCGT	333CTCTCC	GGCAGTGCCAGC	GCGAGGAGGCGCGGG
720 240	ProLeuProLysArgProArgArg	zaSertena	GlvSerAlaSe	llaArgArgArgG1v
Z4U			,	

FIG. 1A

AGGACGGTGGACCGAGTGACCGTGGTTTCTGTGTGGTCACCTGCCAGACCGCGAA ArgThrArgGlyProSerAspArgGlyPheCysValValSerProAlaArgProAlaGlu 6AAGGCCGCTGTTTGGAGGGTGGCTCTCTGGCAGGCCACTCCCACCCA	GGCGCTGCCCCTGAGCCGGAGCGGACGCCCGTTGGGCAGGGGTCCTGGGCCCACCCGGGC	780
AGGACGCGTGGACCGAGTGACCGTGGTTTCTGTGTGTGTG	GlyAlaAlaProGluProGluArgThrProValGlyGlnGlySerTrpAlaHisProGly	
ArgThrArgGlyProSerAspArgGlyPheCysValValSerProAlaArgProAlaGlu GAAGCCACCTCTTTGGAGGGTGCGCTCTCTGGCACGCCCACCCA	- · · · · · · · · · · · · · · · · · · ·	
ArgThrArgGlyProSerAspArgGlyPheCysValValSerProAlaArgProAlaGlu GAAGCCACCTCTTTGGAGGGTGCGCTCTCTGGCACGCCCACCCA		
GAAGCCACCTCTTTGGAGGGTGCGCTCTCTGGCACGCCCACCCCACCCA	AGGACGCGTGGACCGAGTGACCGTGGTTTCTGTGTGTGTCACCTGCCAGACCCGCCGAA	840
GiuAlathrSerLeuGluGlyAlaLeuSerGlyThrArgHisSerHisProSerValGly CGCCAGCACCACGCGGGGCCCCCCATCCACATCGCGGGCCACCACGTCCCTGGGACACGCCT ArgGlnHisHisAlaGlyProProSerThrSerArgProProArgProTrpAspThrPro 320 TGTCCCCCGGGTGTACGCCGAGACCAAGCACTTCCTCTACTCCTCAGGCGACAAGGAGCAG CysProProValTyrAlaGluThrLysHisPheleuTyrSerSerGlyAspLysGluGln 340 CTGGGGGCCCTCCTTCCTACTCAGGTCTCTGAGGCCCAGGCCTGACTGGCGGTCGGAGGCTC LeuArgProSerPheleuLeuSerSerLeuArgProSerLeuThrGlyAlaArgArgLeu 360 GTGGAGACCATCTTTCTGGGTTCCAGGCCCTGGATGCCAGGGACTCCCCGGAGGTTGCCC ValGluThrIlePheLeuGlySerArgProTrpMetProGlyThrProArgArgLeuPro 380 CGCCTGCCCCAGCGCTACTGGCAAATGCGGCCCTGTTTCTGGAGCTGCTCTGGGAACCAC ArgLeuProGlnArgTyrTTrpGlnMetArgProLeuPheLeuGluLeuLeuGlyAsnHis 400 CGCCAGTGCCCCAGGGGTGCTCCTCAAGACGCACTGCCCGCTGGAGCTGCGGTCACC AlaGlnCysProTyrGlyValLeuLeuLysThrHisCysProLeuArgAlaAlaValThr 420 CCAGCAGCCGGTGTCTGTGCCCGGGAAGACCCCCGAGGAG ProAlaAlaGlyValCysAlaArgGluLysProGlnGlySerValAlaAlaProGluGlu 440 CCAGCAGCCGGTGTCTGTGCCCGGGGAGAAGCCCCCGAGGAG SGGACACAGACCCCCGTCGCTGGTGCAGCTCCTCGGCAAGCCCCTGGCAG SGGACACAGACCCCCGTCGCTGGTGCAGCTGCCCCCAAGGAC CAGGAGCCCCTTCGTGGGGGCCCCCGAGGAG CAGGACCCCGTTCGTGGCGGGCCCCCGAGGAG CAGGACACAGACCCCCGTGGGCCTGCTGGGGCCCCCAAGGAC CAGGACCCCGTTCGTGGGGGCCTGCTGGGGCCCCCAGGCCTCTGGGGAGCTCC CAGGCACCACGAGCCCCTGGGGCCTGCTGGGCCCCCAGGCCTCTGGGGAGCTCC CAGGCACAACGAACCCCCGTTCGCTGGGCCGCCTGGGGAAGCTCC CAGGCACAACGAACGCCCTTCGGGGAACCACCAAGAACTTCACCCCCGGGAAGCAC CAGCCACAACGAACGCCCCTTCCTCAAGAACACCAAGAACTTCACCCCCGGGAAAGCAC CAGCCACAACGAACGCCCCTTCCCCCAGGAACACCCAAGAACTTCACCCCCGGGAAACGCA CAGCCACAACGAACGCCCCTTCCCCCAGGAACACCCAAGAACTTCACCCCCGGGAAACGCAT CAGCCACAACGAACGCCCCTTCCCCCCAGGCCTTCCCCCCAGGCCTTCCCCCCAGGCCTTCCCCCCAGGCCTCCCCCAGGCCTCCCCCAGGCCTCCCCCCAGGCCTCCCCCCAGGCCTCCCCCCCC	ArgThrArgGlyProSerAspArgGlyPheCysValValSerProAlaArgProAlaGlu	280
GiuAlathrSerLeuGluGlyAlaLeuSerGlyThrArgHisSerHisProSerValGly CGCCAGCACCACGCGGGGCCCCCCATCCACATCGCGGGCCACCACGTCCCTGGGACACGCCT ArgGlnHisHisAlaGlyProProSerThrSerArgProProArgProTrpAspThrPro 320 TGTCCCCCGGGTGTACGCCGAGACCAAGCACTTCCTCTACTCCTCAGGCGACAAGGAGCAG CysProProValTyrAlaGluThrLysHisPheleuTyrSerSerGlyAspLysGluGln 340 CTGGGGGCCCTCCTTCCTACTCAGGTCTCTGAGGCCCAGGCCTGACTGGCGGTCGGAGGCTC LeuArgProSerPheleuLeuSerSerLeuArgProSerLeuThrGlyAlaArgArgLeu 360 GTGGAGACCATCTTTCTGGGTTCCAGGCCCTGGATGCCAGGGACTCCCCGGAGGTTGCCC ValGluThrIlePheLeuGlySerArgProTrpMetProGlyThrProArgArgLeuPro 380 CGCCTGCCCCAGCGCTACTGGCAAATGCGGCCCTGTTTCTGGAGCTGCTCTGGGAACCAC ArgLeuProGlnArgTyrTTrpGlnMetArgProLeuPheLeuGluLeuLeuGlyAsnHis 400 CGCCAGTGCCCCAGGGGTGCTCCTCAAGACGCACTGCCCGCTGGAGCTGCGGTCACC AlaGlnCysProTyrGlyValLeuLeuLysThrHisCysProLeuArgAlaAlaValThr 420 CCAGCAGCCGGTGTCTGTGCCCGGGAAGACCCCCGAGGAG ProAlaAlaGlyValCysAlaArgGluLysProGlnGlySerValAlaAlaProGluGlu 440 CCAGCAGCCGGTGTCTGTGCCCGGGGAGAAGCCCCCGAGGAG SGGACACAGACCCCCGTCGCTGGTGCAGCTCCTCGGCAAGCCCCTGGCAG SGGACACAGACCCCCGTCGCTGGTGCAGCTGCCCCCAAGGAC CAGGAGCCCCTTCGTGGGGGCCCCCGAGGAG CAGGACCCCGTTCGTGGCGGGCCCCCGAGGAG CAGGACACAGACCCCCGTGGGCCTGCTGGGGCCCCCAAGGAC CAGGACCCCGTTCGTGGGGGCCTGCTGGGGCCCCCAGGCCTCTGGGGAGCTCC CAGGCACCACGAGCCCCTGGGGCCTGCTGGGCCCCCAGGCCTCTGGGGAGCTCC CAGGCACAACGAACCCCCGTTCGCTGGGCCGCCTGGGGAAGCTCC CAGGCACAACGAACGCCCTTCGGGGAACCACCAAGAACTTCACCCCCGGGAAGCAC CAGCCACAACGAACGCCCCTTCCTCAAGAACACCAAGAACTTCACCCCCGGGAAAGCAC CAGCCACAACGAACGCCCCTTCCCCCAGGAACACCCAAGAACTTCACCCCCGGGAAACGCA CAGCCACAACGAACGCCCCTTCCCCCAGGAACACCCAAGAACTTCACCCCCGGGAAACGCAT CAGCCACAACGAACGCCCCTTCCCCCCAGGCCTTCCCCCCAGGCCTTCCCCCCAGGCCTTCCCCCCAGGCCTCCCCCAGGCCTCCCCCAGGCCTCCCCCCAGGCCTCCCCCCAGGCCTCCCCCCCC		
GiuAlathrSerLeuGluGlyAlaLeuSerGlyThrArgHisSerHisProSerValGly CGCCAGCACCACGCGGGGCCCCCCATCCACATCGCGGGCCACCACGTCCCTGGGACACGCCT ArgGlnHisHisAlaGlyProProSerThrSerArgProProArgProTrpAspThrPro 320 TGTCCCCCGGGTGTACGCCGAGACCAAGCACTTCCTCTACTCCTCAGGCGACAAGGAGCAG CysProProValTyrAlaGluThrLysHisPheleuTyrSerSerGlyAspLysGluGln 340 CTGGGGGCCCTCCTTCCTACTCAGGTCTCTGAGGCCCAGGCCTGACTGGCGGTCGGAGGCTC LeuArgProSerPheleuLeuSerSerLeuArgProSerLeuThrGlyAlaArgArgLeu 360 GTGGAGACCATCTTTCTGGGTTCCAGGCCCTGGATGCCAGGGACTCCCCGGAGGTTGCCC ValGluThrIlePheLeuGlySerArgProTrpMetProGlyThrProArgArgLeuPro 380 CGCCTGCCCCAGCGCTACTGGCAAATGCGGCCCTGTTTCTGGAGCTGCTCTGGGAACCAC ArgLeuProGlnArgTyrTTrpGlnMetArgProLeuPheLeuGluLeuLeuGlyAsnHis 400 CGCCAGTGCCCCAGGGGTGCTCCTCAAGACGCACTGCCCGCTGGAGCTGCGGTCACC AlaGlnCysProTyrGlyValLeuLeuLysThrHisCysProLeuArgAlaAlaValThr 420 CCAGCAGCCGGTGTCTGTGCCCGGGAAGACCCCCGAGGAG ProAlaAlaGlyValCysAlaArgGluLysProGlnGlySerValAlaAlaProGluGlu 440 CCAGCAGCCGGTGTCTGTGCCCGGGGAGAAGCCCCCGAGGAG SGGACACAGACCCCCGTCGCTGGTGCAGCTCCTCGGCAAGCCCCTGGCAG SGGACACAGACCCCCGTCGCTGGTGCAGCTGCCCCCAAGGAC CAGGAGCCCCTTCGTGGGGGCCCCCGAGGAG CAGGACCCCGTTCGTGGCGGGCCCCCGAGGAG CAGGACACAGACCCCCGTGGGCCTGCTGGGGCCCCCAAGGAC CAGGACCCCGTTCGTGGGGGCCTGCTGGGGCCCCCAGGCCTCTGGGGAGCTCC CAGGCACCACGAGCCCCTGGGGCCTGCTGGGCCCCCAGGCCTCTGGGGAGCTCC CAGGCACAACGAACCCCCGTTCGCTGGGCCGCCTGGGGAAGCTCC CAGGCACAACGAACGCCCTTCGGGGAACCACCAAGAACTTCACCCCCGGGAAGCAC CAGCCACAACGAACGCCCCTTCCTCAAGAACACCAAGAACTTCACCCCCGGGAAAGCAC CAGCCACAACGAACGCCCCTTCCCCCAGGAACACCCAAGAACTTCACCCCCGGGAAACGCA CAGCCACAACGAACGCCCCTTCCCCCAGGAACACCCAAGAACTTCACCCCCGGGAAACGCAT CAGCCACAACGAACGCCCCTTCCCCCCAGGCCTTCCCCCCAGGCCTTCCCCCCAGGCCTTCCCCCCAGGCCTCCCCCAGGCCTCCCCCAGGCCTCCCCCCAGGCCTCCCCCCAGGCCTCCCCCCCC	GAAGCCACCTCTTTCGAGCCTCCCCTCTCTCCCACCCCACTCCCACCCA	
CGCCAGCACCACGGGGCCCCCCATCCACATCGGGGCCACCACGTCCCTGGGACACGCCT ArgGlnHisHisAlaGlyProProSerThrSetArgProProArgProTrpAspThrPro 320 TGTCCCCCGGTGTACGCCGAGACCAAGCACTTCCTGTACTCCTCAGGCGACAAGGAGCAG CysProProValTyrAlaGluThrLysHisPheleuTyrSerSerGlyAspLysGluGln 340 CTGCGGGCCCTCCTTCCTACTCAGCTCTCTGAGGCCCAGCCTGACTGGCGCTCGGAGGCTC LeuArgProSerPheLeuLeuSerSerLeuArgProSerLeuThrGlyAlaArgArgLeu GTGGAGACCATCTTTCTGGGTTCCAGGCCCTGGATGCCAGGGGACTCCCCGGAGGTTGCCC ValGluThrIlePheLeuGlySerArgProTrpMetProGlyThrProArgArgLeuPro 380 CGCCTGCCCCAGCGCTACTGGCAAATGCGGCCCTGTTTCTGGAGCTGCTTGGGAACCAC ArgLeuProGlnArgTyrTrpGlnMetArgProLeuPheleuGluLeuLeuGlyAsnHis GCGCAGTGCCCCAAGGGGTGCTCCTCAAGACGCACTGCCGGTGGAGCTGCGGTCACC AlaGlnCysProTyrGlyValLeuLeuLysThrHisCysProLeuArgAlaAlaValThr CCAGCAGCGGGTTCTTGTGGCCGGGAGAGAGGCCCCGGAGGAG ProAlaAlaGlyValCysAlaArgGluLysProGlnGlySerValAlaAlaProGluGlu 400 CGGGAACACGAACCCCCGTCGCCTGGTGCAGCTGCTCCGGCAGCACCAGCACCCCTGGCAG SAGGAACACAGACCCCCGTCGCCTGGTGCAGCTGCTCCGCCAGGCCCCTGGCAG SAGGAACAGACCCCCGTCGCCTGGTGCAGCTGCTCCGCCAGGCCCCTGGCAG SAGGAACAGACCCCCGTCGCCTGGTGCAGCTGCTCCGCCAGGCCCCTGGCAG SAGGAACAGACCCCCGTCGCCTGGTGCAGCTGCTCCGCCAGGCCCCTGGCAG AlaGlyPheValArgArgLeuValGlnLeuLeuArgGlnHisSerSerProTrpGln 400 CGGCACAACGAACGCCCCTTCCTCAGGAACACCAAGAAGTTCATCCCCTGGGGAACCAT 440 440 CGGCACAACGAACGCCCCTTCCTCAGGAACACCAAGAAGTTCATCCCCTGGGGAACCAT 440 440 CGGCACAACGAACGCCGCTTCCTCAGGAACACCAAGAAGTTCATCCCCTGGGGAACCAT 440 440 CGGCACAACGAACGCCGCTTCCTCAGGAACACCAAGAAGTTCATCCCCTGGGGAACCAT 440 440 CGGCACAACGAACGCCGCTTCCTCAAGGAACACCAAGAAGTTCATCCCCTGGGGAACCAT 440 440 CGGCACAACGAACGCCGCTTCCTCAAGGAACACCAAGAAGTTCATCCCCTGGGGAACCAT 440 440 CGGCACAACACGAACGCCGCTTCCTCAAGGAACACCAAGAAGTTCATCCCCTGGGGAACCAT 440 440 CGGCACAACACGAACGCCCCTTCCTCAAGGAACACCCAAGAAGTTCATCTCCCTGGGGAACCAT 440 440 CGGCACAACACGAACGCCGCTTCCTCAAGGAACACCCAAGAAGTTCATCCCCTGGGGAACCAT 440 440 CGGCACAACACGAACGCCCCTTCCTCAAGGAACACCCAAGAACTCCACCAAGAACTCCACCAGGAACTCCTCCGGGGAACCAT 440 440 CGGCACAACACGAACGCCCCTTCCTCAAGGAACACCCAAGAACTCCAAGAACTCCACCAGGAACTCCTCCGGGGAACCTT	GluAlaThrSerLeuGluGlvAlaLeuSerGlvThrArguigSoruigBroggeu-u-lol	
ArgGlnHisHisAlaGlyProProSerThrSerArgProProArgProTrpAspThrPro TGTCCCCCGGGTGTACGCCGAGACCAAGCACTTCCTCTACTCCTCAGGCGACAAGGAGCAG CysProProValTyrAlaGluThrLysHisPheleuTyrSerSerGlyAspLysGluGln 340 CTGCGGCCCTCCTTCCTACTCAGTCTCTGAGGCCCAGCCTGACTGGCGCTCGGAGGCTC LeuArgProSerPheleuLeuSerSerLeuArgProSerLeuThrGlyAlaArgArgLeu 360 GTGGAGACCATCTTTCTGGGTTCCAGGCCCTGGATGCCAGGGACTCCCCCGCAGGTTGCCC ValGluThrIlePheleuGlySerArgProTrpMetProArgArgLeuPro 380 CGCCTGCCCCAGCGCTACTGGCAAATGCGGCCCTGTTTCTGGAGCTGCTTGGGAACCAC ArgLeuProGinArgTyrTrpGinMetArgProLeuPheleuGluLeuLeuGlyAsnHis GCGCAGTGCCCCAGCGGTGCTCCTCAAGACGCACTGCCGGTGGGAGCTGCGGTCACC AlaGlnCysProTyrGlyValLeuLeuLysThrHisCysProLeuArgAlaAlaValThr CCAGCAGCCGGTGTCTTGCCCGGGAGAAAGCCCCAGGGGTTCTTGGGGGCCCCCGAGGAG ProAlaAlaGlyValCysAlaArgGluLysProGlnGlySerValAlaAlaProGluGlu GGGGACACAGACCCCCGTCGCTGGTGCAGGTTGCTCCGCCAGCACCCCCGAGGAG SluAspThrAspProArgArgLeuValGlnLeuLeuArgGlnHisSerSerProTrpGln GGTTACGGCTTCGTGGCGGGGCTTCCTCAGGACTGCCCCCAGGGCCCCCGAGGAG AGGACCACAGACCCCCGTTGGTGCAGCTGCTCCGCCAGCACCAGCACCCCTTGGCAG CTGTACGGCTTCGTGGGGGCCTGCTGCGCCGGGGTGGTGCCCCCTGGGGAGCCCCTGGCAG CTGTACGGCTTCGTGGGGGCCTGCTCCTCGGGGAACCCCCTGGGGACCCC CALTTyrGlyPheValArgAlaCysLeuArgArgLeuValProProGlyLeuTrpGlySer 1500 GGGCACAACGAACGCCCGTTCCTCAGGAACACCAAGAAGTTCATCTCCCTGGGGAACCAT 1500		300
ArgGlnHisHisAlaGlyProProSerThrSerArgProProArgProTrpAspThrPro TGTCCCCCGGGTGTACGCCGAGACCAAGCACTTCCTCTACTCCTCAGGCGACAAGGAGCAG CysProProValTyrAlaGluThrLysHisPheleuTyrSerSerGlyAspLysGluGln 340 CTGCGGCCCTCCTTCCTACTCAGTCTCTGAGGCCCAGCCTGACTGGCGCTCGGAGGCTC LeuArgProSerPheleuLeuSerSerLeuArgProSerLeuThrGlyAlaArgArgLeu 360 GTGGAGACCATCTTTCTGGGTTCCAGGCCCTGGATGCCAGGGACTCCCCCGCAGGTTGCCC ValGluThrIlePheleuGlySerArgProTrpMetProArgArgLeuPro 380 CGCCTGCCCCAGCGCTACTGGCAAATGCGGCCCTGTTTCTGGAGCTGCTTGGGAACCAC ArgLeuProGinArgTyrTrpGinMetArgProLeuPheleuGluLeuLeuGlyAsnHis GCGCAGTGCCCCAGCGGTGCTCCTCAAGACGCACTGCCGGTGGGAGCTGCGGTCACC AlaGlnCysProTyrGlyValLeuLeuLysThrHisCysProLeuArgAlaAlaValThr CCAGCAGCCGGTGTCTTGCCCGGGAGAAAGCCCCAGGGGTTCTTGGGGGCCCCCGAGGAG ProAlaAlaGlyValCysAlaArgGluLysProGlnGlySerValAlaAlaProGluGlu GGGGACACAGACCCCCGTCGCTGGTGCAGGTTGCTCCGCCAGCACCCCCGAGGAG SluAspThrAspProArgArgLeuValGlnLeuLeuArgGlnHisSerSerProTrpGln GGTTACGGCTTCGTGGCGGGGCTTCCTCAGGACTGCCCCCAGGGCCCCCGAGGAG AGGACCACAGACCCCCGTTGGTGCAGCTGCTCCGCCAGCACCAGCACCCCTTGGCAG CTGTACGGCTTCGTGGGGGCCTGCTGCGCCGGGGTGGTGCCCCCTGGGGAGCCCCTGGCAG CTGTACGGCTTCGTGGGGGCCTGCTCCTCGGGGAACCCCCTGGGGACCCC CALTTyrGlyPheValArgAlaCysLeuArgArgLeuValProProGlyLeuTrpGlySer 1500 GGGCACAACGAACGCCCGTTCCTCAGGAACACCAAGAAGTTCATCTCCCTGGGGAACCAT 1500		
ArgGlnHisHisAlaGlyProProSerThrSerArgProProArgProTrpAspThrPro TGTCCCCCGGGTGTACGCCGAGACCAAGCACTTCCTCTACTCCTCAGGCGACAAGGAGCAG CysProProValTyrAlaGluThrLysHisPheleuTyrSerSerGlyAspLysGluGln 340 CTGCGGCCCTCCTTCCTACTCAGTCTCTGAGGCCCAGCCTGACTGGCGCTCGGAGGCTC LeuArgProSerPheleuLeuSerSerLeuArgProSerLeuThrGlyAlaArgArgLeu 360 GTGGAGACCATCTTTCTGGGTTCCAGGCCCTGGATGCCAGGGACTCCCCCGCAGGTTGCCC ValGluThrIlePheleuGlySerArgProTrpMetProArgArgLeuPro 380 CGCCTGCCCCAGCGCTACTGGCAAATGCGGCCCTGTTTCTGGAGCTGCTTGGGAACCAC ArgLeuProGinArgTyrTrpGinMetArgProLeuPheleuGluLeuLeuGlyAsnHis GCGCAGTGCCCCAGCGGTGCTCCTCAAGACGCACTGCCGGTGGGAGCTGCGGTCACC AlaGlnCysProTyrGlyValLeuLeuLysThrHisCysProLeuArgAlaAlaValThr CCAGCAGCCGGTGTCTTGCCCGGGAGAAAGCCCCAGGGGTTCTTGGGGGCCCCCGAGGAG ProAlaAlaGlyValCysAlaArgGluLysProGlnGlySerValAlaAlaProGluGlu GGGGACACAGACCCCCGTCGCTGGTGCAGGTTGCTCCGCCAGCACCCCCGAGGAG SluAspThrAspProArgArgLeuValGlnLeuLeuArgGlnHisSerSerProTrpGln GGTTACGGCTTCGTGGCGGGGCTTCCTCAGGACTGCCCCCAGGGCCCCCGAGGAG AGGACCACAGACCCCCGTTGGTGCAGCTGCTCCGCCAGCACCAGCACCCCTTGGCAG CTGTACGGCTTCGTGGGGGCCTGCTGCGCCGGGGTGGTGCCCCCTGGGGAGCCCCTGGCAG CTGTACGGCTTCGTGGGGGCCTGCTCCTCGGGGAACCCCCTGGGGACCCC CALTTyrGlyPheValArgAlaCysLeuArgArgLeuValProProGlyLeuTrpGlySer 1500 GGGCACAACGAACGCCCGTTCCTCAGGAACACCAAGAAGTTCATCTCCCTGGGGAACCAT 1500	CGCCAGCACCACGCGGGCCCCCCATCCACATCGCGGCCACCACGTCCCTGGGACACCCCT	960
TGTCCCCCGGTGTACGCCGAGACCAAGCACTTCCTCTACTCCTCAGGCGACAAGGAGCAG CysProProValTyrAlaGluThrLysHis?heleuTyrSerSerGlyAspLysGluGln 340 CTGCGGGCCCTCCTTCCTACTCAGCTCTCTGAGGCCCAGCCTGACTGGCGCTCGGAGGCTC LeuArgProSerPheLeuLeuSerSerLeuArgProSerLeuThrGlyAlaArgArgLeu 360 GTGGAGACCATCTTTCTGGGTTCCAGGCCCTGGATGCCAGGGACTCCCCGCAGGTTGCCC ValGluThrIlePheLeuGlySerArgProTrpMetProGlyThrProArgArgLeuPro 380 CGCCTGCCCCAGGCGTACTGGCAAATGCGGCCCTGTTTCTGGAGCTGCTTGGGAACCAC ArgLeuProGlnArgTyrTrpGlnMetArgProLeuPheLeuGluLeuLeuGlyAsnHis GCGCAGTGCCCTACGGGGTGCTCCTCAAGACGCACTGCCCGTGCGAGCTGCCGGTCACC AlaGlnCysProTyrGlyValLeuLeuLysThrHisCysProLeuArgAlaAlaValThr CCAGCAGCCGGTGTCTGTGCCCGGGAGAAGCCCCCGAGGAG ProAlaAlaGlyValCysAlaArgGluLysProGlnGlySerValAlaAlaProGluGlu 440 CAGGCACCAGCCCGTCGCCTGGTGCAGCTGCTCCGCCAGGACCCCCGAGGAG SluAspThrAspProArgArgLeuValGlnLeuLeuArgGlnHisSerSerProTrpGln 460 CTGTACGGCTTCCTGGCGGGCCTGCCTGCCCGGCGGCCCCCAGGCCCCCCCC	ArgGlnHisHisAlaGlyProProSerThrSerArgProProArgProTrpAspThrPro	
CysProProValTyrAlaGluThrLysHisPheleuTyrSerSerGlyAspLysGluGln CTGCGGGCCTCCTTCCTACTCAGCTCTCTGAGGCCCAGCCTGACTGGCGCTCCGGAGGCTC LeuArgProSerPheLeuLeuSerSerLeuArgProSerLeuThrGlyAlaArgArgLeu 360 GTGGAGACCATCTTTCTGGGTTCCAGGCCCTGGATGCCCGCAGGATTGCCC ValGluThrIlePheLeuGlySerArgProTrpMetProGlyThrProArgArgLeuPro 380 CGCCTGCCCCAGCGCTACTGGCAAATGCGGCCCCTGTTTCTGGAGCTGCTTGGGAACCAC ArgLeuProGlnArgTyrTrpGlnMetArgProLeuPheLeuGluLeuLeuGlyAsnHis GCGCATGCCCCTACGGGGTGCTCCTCAAGACGCACTGCCGGTGGAGCTGCTGCACC AlaGlnCysProTyrGlyValLeuLeuLysThrHisCysProLeuArgAlaAlaValThr CCAGCAGCCGGTGTCTGTGCCCGGGAGAAGCCCCAGGGGTCTCTGTGGGGGCCCCCGAGGAG ProAlaAlaGlyValCysAlaArgGluLysProGlnGlySerValAlaAlaProGluGlu GAGGACACAGACCCCCGTCGCCTGGTGCAGCTGCTCCGCCAGCACAGCAGCCCCTGGCAG SluAspThrAspProArgArgLeuValGlnLeuLeuArgGlnHisSerSerProTrpGln GTGTACGGCTTCGTGGGGGGCCTGCTGCGCGGGGCTCCCCAGGCCTCTGGGGGCCCC CalTyrGlyPheValArgAlaCysLeuArgArgLeuValProProGlyLeuTrpGlySer 1500 GGGCACAACGACGCCCCTTCCTCAGGAACACCCAAGAAGTTCATCTCCCTGGGGAACCAT 1500	, , , , , , , , , , , , , , , , , , , ,	320
CysProProValTyrAlaGluThrLysHisPheleuTyrSerSerGlyAspLysGluGln CTGCGGGCCTCCTTCCTACTCAGCTCTCTGAGGCCCAGCCTGACTGGCGCTCCGGAGGCTC LeuArgProSerPheLeuLeuSerSerLeuArgProSerLeuThrGlyAlaArgArgLeu 360 GTGGAGACCATCTTTCTGGGTTCCAGGCCCTGGATGCCCGCAGGATTGCCC ValGluThrIlePheLeuGlySerArgProTrpMetProGlyThrProArgArgLeuPro 380 CGCCTGCCCCAGCGCTACTGGCAAATGCGGCCCCTGTTTCTGGAGCTGCTTGGGAACCAC ArgLeuProGlnArgTyrTrpGlnMetArgProLeuPheLeuGluLeuLeuGlyAsnHis GCGCATGCCCCTACGGGGTGCTCCTCAAGACGCACTGCCGGTGGAGCTGCTGCACC AlaGlnCysProTyrGlyValLeuLeuLysThrHisCysProLeuArgAlaAlaValThr CCAGCAGCCGGTGTCTGTGCCCGGGAGAAGCCCCAGGGGTCTCTGTGGGGGCCCCCGAGGAG ProAlaAlaGlyValCysAlaArgGluLysProGlnGlySerValAlaAlaProGluGlu GAGGACACAGACCCCCGTCGCCTGGTGCAGCTGCTCCGCCAGCACAGCAGCCCCTGGCAG SluAspThrAspProArgArgLeuValGlnLeuLeuArgGlnHisSerSerProTrpGln GTGTACGGCTTCGTGGGGGGCCTGCTGCGCGGGGCTCCCCAGGCCTCTGGGGGCCCC CalTyrGlyPheValArgAlaCysLeuArgArgLeuValProProGlyLeuTrpGlySer 1500 GGGCACAACGACGCCCCTTCCTCAGGAACACCCAAGAAGTTCATCTCCCTGGGGAACCAT 1500		
CTGCGGCCCTCCTTCCTACTCAGCTCTCTGAGGCCCAGCCTGACTGGCGCTCGGAGGCTC LeuArgProSerPheLeuLeuSerSerLeuArgProSerLeuThrGlyAlaArgArgLeu 360 GTGGAGACCATCTTTCTGGGTTCCAGGCCCTGGATGCCAGGGACTCCCCGCAGGTTGCCC ValGluThrIlePheLeuGlySerArgProTrpMetProGlyThrProArgArgLeuPro 380 CGCCTGCCCCAGCGCTACTGGCAAATGCGGCCCCTGTTTCTGGAGCTGCTTGGGAACCAC ArgLeuProGlnArgTyrTrpGlnMetArgProLeuPheLeuGluLeuLeuGlyAsnHis GCGCAGTGCCCCTACGGGGTGCTCCTCAAGACGCACTGCCGGTGGAGCTGCGGTCACC AlaGlnCysProTyrGlyValLeuLeuLysThrHisCysProLeuArgAlaAlaValThr CCAGCAGCCGGTGTCTGTGCCCGGGAAGAGCCCCAGGGCTCTGTGGGGGGCCCCCGAGGAG ProAlaAlaGlyValCysAlaArgGluLysProGlnGlySerValAlaAlaProGluGlu 400 GGGACAACGACCCCCGTCGCCTGGTGCAGCTGCTCCGCCAGCACCACCAGCCCCTGGCAG SluAspThrAspProArgArgLeuValGlnLeuLeuArgGlnHisSerSerProTrpGln 400 GTGTACGGCTTCGTGCGGGGCCTGCTGCGCCGGGGCCCCCAGGCCTCTGGGGGCCCC AlaClyyGlyPheValArgAlaCysLeuArgArgLeuValProProGlyLeuTrpGlySer 400 GGGCACAACGAACGCCCCTTCCTCAGGAACACCAAGAAGTTCATCTCCCTGGGGAAGCAT 400 401 401 401 402 403 404 405 406 407 407 407 407 408 408	TGTCCCCCGGTGTACGCCGAGACCAAGCACTTCCTCTACTCCTCAGGCGACAAGGAGCAG	1020
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GCGCAGTGCCCCTACGGGGTGCTCCTCAAGACGCACTGCCCGCTGCGAGCTGCGGTCACC AlaGlnCysProTyrGlyValLeuLeuLysThrHisCysProLeuArgAlaAlaValThr CCAGCAGCCGGTGTCTGTGCCCGGGAGAAGCCCCAGGGGCTCTGTGGGGGCCCCCGAGGAG ProAlaAlaGlyValCysAlaArgGluLysProGlnGlyserValAlaAlaProGluGlu GAGGACACAGACCCCGTCGCCTGGTGCAGCTGCTCCGCCAGCACAGCACCCCTGGCAG SluAspThrAspProArgArgLeuValGlnLeuLeuArgGlnHisSerSerProTrpGln GTGTACGGCTTCGTGCGGGGCCTGCTGCGCCGGGCTGGTGCCCCAGGCCTCTGGGGCTCC ValTyrGlyPheValArgAlaCysLeuArgArgLeuValProProGlyLeuTrpGlySer GGCACAACGAACGCCGCTTCCTCAGGAACACCCAAGAAGTTCATCTCCCTGGGGAAGCAT 1500	ArgLeuProGinArgTyrTrDGinMetArgProLeuPheLeuGluLeuLeuGlvAspHis	
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SerHisValSerThrLeuThrAspLeuGlnProTyrMetArgGlnPheValAlaHisLeu	
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CAGGAGACCAGCCCGCTGAGGGATGCCGTCGTCATCGAGCAGAGCTCCTCCCTGAATGAG	2400
GlnGluThrSerProLeuArgAspAlaValValIleGluGlnSerSerSerLeuAsnGlu	2400
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GCCAGCAGTGGCCTCTTCGACGTCTTCCTACGCTTCATGTGCCACCACGCCGTGCGCATC	
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AlaSerSerGlyLeuPheAspValPheLeuArgPheMetCysHisHisAlaValArgIle	820
AGGGGCAAGTCCTACGTCCAGTGCCAGGGGATCCCGCAGGGCTCCATCCTCTCCACGCTG	
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ArgGlyLysSerTyrValGlnCysGlnGlyIleProGlnGlySerIleLeuSerThrLeu	840
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CAGATGCCGCCCACGCCTATTCCCCTCCTCCCCCCC	
CAGATGCCGGCCCACGGCCTATTCCCCTGGTGCGGCCTGCTGCTGGATACCCGGACCCTG	2820
GlnMetProAlaHisGlyLeuPheProTrpCysGlyLeuLeuLeuAspThrArgThrLeu	940
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GAGGTCCACACGCACTACTCCACCTACTACTACTACTACTACTACTACTACT	
GAGGTGCAGAGCGACTACTCCAGCTATGCCCGGACCTCCATCAGAGCCAGTCTCACCTTC	2880
GluValGlnSerAspTyrSerSerTyrAlaArgThrSerIleArgAlaSerLeuThrPhe	960
	200
AACCCCCCTTCAACCCTCCAACAACAACAACAACAACAAC	
AACCGCGGCTTCAAGGCTGGGAGGAACATGCGTCGCAAACTCTTTGGGGTCTTGCGGCTG	2940
AsnArgGlyPheLysAlaGlyArgAsnMetArgArgLysLeuPheGlyValLeuArgLeu	980
1 1 I was a supplied to the su	300
AACTCTCACACACCTCTTTTCCCCCATTTTCCCACCTCTCCCACCTCCCACCTCCCACCTCCCACCTCCCACCTCCCACCTCCCACCTCCCACCTCCCACCTCACCTACCTACACCTACCTACCTACCTACCTACCTACACCTACCTACCTACCTACCTACCTACCTACCTACCTACCTACCTACCTACCTACCTACCTACCTA	
AAGTGTCACAGCCTGTTTCTGGATTTGCAGGTGAACAGCCTCCAGACGGTGTGCACCAAC	3000
LysCysHisSerLeuPheLeuAspLeuGlnValAsnSerLeuGlnThrValCysThrAsn	1000
The state of the s	1000
ATCTACAACAMCCTCCTCCTCCACCCCTCCACCCTACACCCTCCACCCTACACCCTCCACCCTACACCCTCCACCCTACACCCTACACCCTACACCCACCCTACACCCACCCTACACCAC	
ATCTACAAGATCCTCCTGCTGCAGGCGTACAGGTTTCACGCATGTGTGCTGCAGCTCCCA	3060
IleTyrLysIleLeuLeuGlnAlaTyrArgPheHisAlaCysValLeuGlnLeuPro	1020
2	1020

FIG. 1D

TTTCATCAGCAAGTTTGGAAGAACCCCACATTTTTCCTGCGCGTCATCTCTGACACGGCC	3120
PheHisGlnGlnValTrpLysAsnProThrPhePheLeuArgValIleSerAspThrAls	1040
	1040
TCCCTCTCCTC CTCCCTCCTCCTCCTCCTCCTCCTCCTC	
TCCCTCTGCTACTCCTGAAAAGCCAAGAACGCAGGGATGTCGCTGGGGGCCAAGGGC	3180
SerLeuCysTyrSerIleLeuLysAlaLysAsnAlaGlyMetSerLeuGlyAlaLysGly	1060
GCCGCCGGCCCTCTGCCCTCCGAGGCCGTGCAGTGGCTGTGCCACCAAGCATTCCTGCTC	22.5
AlaAlaGlyProLeuProSerGluAlaValGlnTrpLeuCysHisGlnAlaPheLeuLeu	3240
and the state of t	1080
AAGCTGACTCGACACCGTGTCACCTACGTGCCACTCCTGGGGTCACTCAGGACAGCCCAG	3300
LysLeuThrArgHisArgValThrTyrValProLeuLeuGlySerLeuArgThrAlaGln	1100
ACGCAGCTGAGTCGGAAGCTCCCGGGGGACGACGCTGACTGCCCTGGAGGCCGCAGCCAAC	
ThrGinLeuSerArgLysLeuProGlyThrThrLeuThrAlaLeuGluAlaAlaAlaAsn	3360
neAsia Asia Asia Asia Asia Asia Asia Asia	1120
CCGGCACTGCCCTCAGACTTCAAGACCATCCTGGACtgatggccaccgccacagccag	3420
ProAlaleuProSerAspPheLysThrIleLeuAsp	1132
GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG	
Gccgagagcagacaccagcagccctgtcacgccgggctctacgtcccagggaggg	3480
Cggcccacacccaggcccgcaccgctgggagtctgaggcctgagtgag	3540
gggctgagtgtccagcacacctgccgtcttcacttcccacaggctgagtgtccagccaa	3600
coccagggccagetittectcaccaggagcccggcttccactccccacataggaatagtc	3660
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graduction of the control of the con	3900
999999ayguyongoggagtaaaatacigaatataagagtttttcagttttgaaaaaaa	3960
aaaa	3064

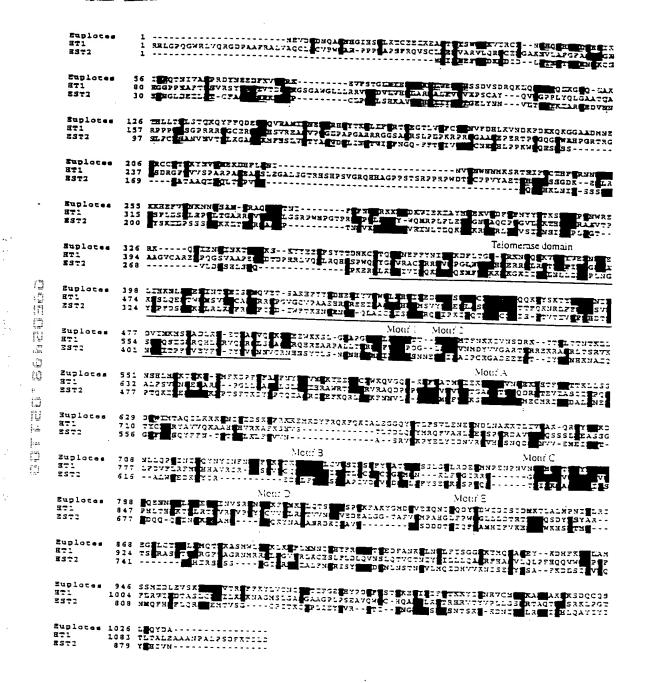


FIG. 2

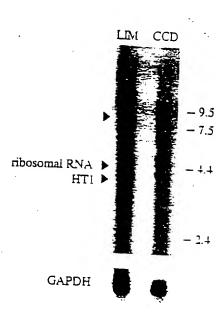


FIG. 3

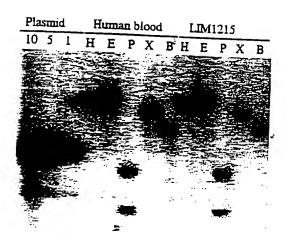


FIG. 4

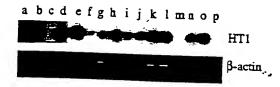


FIG. 5



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FIG. 6

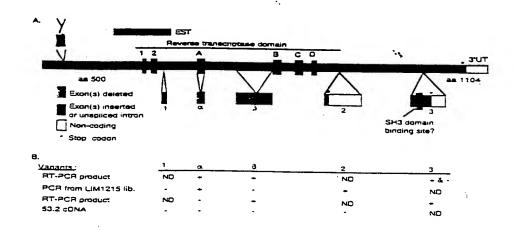


FIG. 7A and 7B

T	222 223 5'-CCAGGTG ggcete geaggtg!TCCTGCC-3'
1	1950 1952 5' -AAACAGG GTCCCTG
α	2130 2167 S'-TGTCAAG gtggatgcccccag GACAGGC-3'
β	2286 2468 5'-GAGCCAC gtototaggggcaa GTCCTAC-3'
2	2843 2844 5' -ACTCCAG GTCAGCC
3	3157 '-AACSCAG COMACAAAACATTICTCTCTCTCTCTCTCTCTCTCTCTCTCTC
ż	Accordance reserve and a property of the prope
	COCCOCCOCCOCCACACCCCCCACACCCCCCCACACCCCCC

FIG. 7C

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FIG. 8

このできるを提覧的です。

FIG. 9

sequence "Y" 104-105 bases

GGCCTCCCCGGGGTCGGCGTCCGGCTGGGGTTGAGGGCGGCCGGGGGGAACCAG
GlyLeuProGlyValGlyValArgLeuGlyLeuArgAlaAlaGlyGlyAsnGln
AlaSerProGlySerAlaSerGlyTrpGly * GlyArgProGlyGlyThrSer
ProProArgGlyArgArgProAlaGlyValGluGlyGlyArgGlyGluProAla

CGACATGCGGAGAGCAGCGCAGGCGACTCAGGGCGCTTCCCCCGCAGGTG ArgHisAlaGluSerSerAlaGlyAspSerGlyArgPheProArgArg AspMetArgArgAlaAlaGlnAlaThrGlnGlyAlaSerProAlaGly ThrCysGlyGluGlnArgArgArgLeuArgAlaLeuProProGlnVal

sequence "1" 38 bases

GTGGCTGTGCTTTGGTTTAACTTCCTTTTTAACCAGAA ValalaValLeuTrpPheAsnPheLeuPheAsnGlnLys

sequence "a" 36 bases

GTGGATGTGACGGGCGCGTACGACACCATCCCCCAG ValAspValThrGlyAlaTyrAspThrIleProGln

sequence "\$" 182 bases

GTCTCTACCTTGACAGACCTCCAGCCGTACATGCGACAGTTCGTGGCTCACCTG ValSerThrleuThrAspleuGlnProTyrMetArgGlnPheValAlaHisLeu

CAGGAGACCAGCCCGCTGAGGGATGCCGTCGTCATCGAGCAGAGCTCCTCCCTG GlnGluThrSerProLeuArgAspAlaValValIleGluGlnSerSerSerLeu

 $\label{lem:aatgaggccag} Aatgaggccagtggcctcttcgacgttcttcctacgcttcatgtgccaccac \\ AsnGlualaSerSerGlyLeuPheAspValPheLeuArgPheMetCysHisHis \\$

GCCGTGCGCATCAGGGGCAA AlaValArgIleArgGlyLys

partial sequence "2" unknown length

 ${\tt GTGAGCGCACCTGGCCGGAAGTGGAGCCTGTGCCCGGCTGGGGCAGGTGCTGCAG}$ ${\tt Ter}$

GGCCGTTGCGTCCACCTCTGCTTCCGTGTGGGGCAGGCGACTGCCAATCCCAAAGGGTCAGATGCCACAGGGTGCCCCTCGTCCCATCTGGGGCTGAGCACAAATGCATCTTCTGTGGAGTGAGGGTGCCTCACAACGGGAGCAGTTTTCTGTGCTATTTTGGTAA...

sequence "3" 159 bases

CCGAAGAAAACATTTCTGTCGTGACTCCTGCGGTGCTTGGGTCGGGACAGCCAGAG AlaGluGluAsnIleSerValValTh;ProAlaValLeuGlySerGlyGlnProGlu

ATGGAGCCACCCCGCAGACCGTCGGGTGTGGGCAGCTTTCCGGTGTCTCCTGGGAGG MetGluProProArgArgProSerGlyValGlySerPheProValSerProGlyArg

GGAGTTGGGCCTGTGACTCCTCAGCCTCTGTTTTCCCCCAGGlyValGlyLeuGlyLeu *

FIG. 10A

sequence "X" unknown length

partial sequence of genomic intron (approximately 2.7 kb) GTGGCTGTGCTTTGGTTTAACTTCCTTTTTAACCAGAAGTGCGTTTGAGCCCCACATT TGGTATCAGCTTAGATGAAGGGCCCGGAGGAGGGGCCACGGGACACAGCCAGGGCCAT GGCACGGCGCCCCCCATTTGTGCGCACAGTGAGGTGGCCGAGGTGCCGGTGCCTCCA GAAAAGCAGCGTGGGGGTTAAGGGGGAGCTCCTGGGGCAGGGAC....

N-terminal truncated telomerase

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FIG. 11B

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FIG. 11C

PRINT OF DRAWINGS AS ORIGINALLY FILED

Reference protein

	ATGCCGCGCGCTCCCCGCCGAGCCGTGCGCTCCCTGCTGCGCAGCCACTACCGCGAG	6
	MetProArgAlaProArgCysArgAlaValArgSerLeuLeuArgSerHisTyrArgGlu	2
	GTGCTGCCGCTGGCCACGTTCGTGCGGCGCCCTGGGGGCCCCAGGGCTGGCGGCTGGTGCAG	12
	ValLeuProLeuAlaThrPheValArgArgLeuGlyProGlnGlyTrpArgLeuValGln	4
		•
	CGCGGGACCCGGCGGCTTTCCGCGCGCGCTGGTGGCCCAGTGCCTGGTGTGCGTGC	18
	ArgGlyAspProAlaAlaPheArgAlaLeuValAlaGlnCysLeuValCysValProTrp	6
	Checohecean	
	GACGCACGGCCGCCCCCCCCCCCCCCCCCCCCCCCCCCC	240
	AspAlaArgProProProAlaAlaProSerPheArgGlnValSerCysLeuLysGluLeu	80
-	GTGGCCCGAGTGCTGCAGAGGCTGTGCGAGCGCGCGCGAAGAACGTGCTGGCCTTCGGC	
	ValAlaArgValLeuGlnArgLeuCysGluArgGlyAlaLysAsnValLeuAlaPheGly	300
		100
	TTCGCGCTGCTGGACGGGGCCCGCGGGGGCCCCCCGAGGCCTTCACCAGCGTGCGC	360
	PheAlaLeuLeuAspGlyAlaArgGlyGlyProProGluAlaPheThrThrSerValArg	120
	AGCTACCTGCCCAACACGGTGACCGACGCACTGCGGGGGAGCGGGGGGTTGGGGGGCTGCTG	420
77	SerTyrLeuProAsnThrValThrAspAlaLeuArgGlySerGlyAlaTrpGlyLeuLeu	140
5	TTGCGCCGCGTGGGCGACGACGTGCTGGTTCACCTGCTGGCACGCTGCGCGCTCTTTGTG	
ř	Lenargardyal Clayara anna i Louval Warland and a language Control Tigge	480
æ,	LeuArgArgValGlyAspAspValLeuValHisLeuLeuAlaArgCysAlaLeuPheVal	160
, i	CTGGTGGCTCCCAGCTGCGCCTACCAGGTGTGCGGGCGCGCTGTACCAGCTCGGCGCT	
블	LeuVal Alla Brosorcus Varius Claud Cuasto Control Cuasto Control	540
=	LeuValAlaProSerCysAlaTyrGlnValCysGlyProProLeuTyrGlnLeuGlyAla	180
¥	GCCACTCAGGCCCGGCCCCCGCCACACGCTAGTGGACCCCGAAGGCGTCTGGGATGCGAA	
្ន	AlaThrGlnAlaArgProProProHisAlaSerGlyProArgArgLeuGlyCysGlu	600
	and the state of t	200
	CGGGCCTGGAACCATAGCGTCAGGGAGGCCGGGGTCCCCCTGGGCCTGCCAGCCCCGGGT	660
-	ArgAlaTrpAsnHisSerValArgGluAlaGlyValProLeuGlyLeuProAlaProGly	220
-		220
	GCGAGGAGGCGCGGGGCAGTGCCAGCCGAAGTCTGCCGTTGCCCAAAGAGGCCCAGGCGT	770
.==	AlaArgArgArgGlyGlySerAlaSerArgSerLeuProLeuProLysArgProArgArg	720
int		240
	GGCGCTGCCCCTGAGCCGGAGCGGGACGCCCGTTGGGCAGGGGTCCTGGGCCCACCCGGGC	780
	GlyAlaAlaProGluProGluArgThrProValGlyGlmGlySerTrpAlaHisProGly	260
		200
	AGGACGCGTGGACCGAGTGACCGTGGTTTCTGTGTGGTGTCACCTGCCAGACCCGCCGAA	840
	ArgThrArgGlyProSerAspArgGlyPheCysValValSerProAlaArgProAlaGlu	280
	GAAGCCACCTCTTTGGAGGGTGCGCTCTCTGGCACGCGCCACTCCCACCCCATCCGTGGGC	900
	GluAlaThrSerLeuGluGlyAlaLeuSerGlyThrArgHisSerHisProSerValGly	300
	CGCCAGCACGACGCGGGCCCCCATCCACATCGCGGCCACCACGTCCCTGGGACACGCCT	960
	ArgGlnHisHisAlaGlyProProSerThrSerArgProProArgProTrpAspThrPro	320
	TGTCCCCCGGTGTACGCCGAGACCAAGCACTTCCTCTACTCCTCAGGCGACAAGGAGCAG	
	CysProProValTyrAlaGluThrLysHisPheLeuTyrSerSerGlyAspLysGluGln	1020
	-1	340
	CTGCGGCCCTCCTTCCTACTCAGCTCTCTGAGGCCCAGCCTGACTGGCGCTCGGAGGCTC	
	LeukraProSerPhelautauCorCortoukraphesontauTheata	1080
	LeuArgProSerPheLeuLeuSerSerLeuArgProSerLeuThrGlyAlaArgArgLeu	360
	GTGGAGACCATCTTTCTGGGTTCCAGGCCCTGGATGCCAGGGACTCCCCGGCAGGTTGCCC	
	ValGluThrIlePheLeuGlySerArgProTrpMetProGlyThrProArgArgLeuPro	1140
		380
	CGCCTGCCCCAGCGCTACTGGCAAATGCGGCCCCTGTTTCTGGAGCTGCTTGGGAACCAC	1200
	ArgLeuProGlnArgTyrTrpGlnMetArgProLeuPheLeuGluLeuLeuGlyAsnHis	1200
		400
	GCGCAGTGCCCCTACGGGTGCTCCTCAAGACGCACTGCCGCTGCGAGCTGCGGTCACC	1260
	AlaGlnCysProTyrGlvValLeuLeuLvsThrHisCysProLeuArcAlallaValThr	1260

FIG. 11D

PRINT OF DRAWINGS AS ORIGINALLY FILED

	CCAGCAGCCGGTGTCTGTGCCCGGGAGAAGCCCCAGGGCTCTGTGGCGGCCCCCGAGGAG ProAlaAlaGlyValCysAlaArgGluLysProGlnGlySerValAlaAlaProGluGlu	1320 440
	GAGGACACAGACCCCCGTCGCCTGGTGCAGCTGCTCCGCCAGCACAGCAGCCCCTGGCAGGCLAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGCA	1380 460
	GTGTACGGCTTCGTGCGGGCTGCCTGCGCCGGCTGGTGCCCCAGGCCTCTGGGGCTCC ValTyrGlyPheValArgAlaCysLeuArgArgLeuValProProGlyLeuTrpGlySer	1440 480
	AGGCACAACGAACGCCGCTTCCTCAGGAACACCAAGAAGTTCATCTCCCTGGGGAAGCAT ArgHisAsnGluArgArgPheLeuArgAsnThrLysLysPheIleSerLeuGlyLysHis	1500 500
	GCCAAGCTCTCGCTGCAGGAGCTGACGTGGAAGATGAGCGTGCGGGGCTGCGCTTGGCTG AlaLysLeuSerLeuGlnGluLeuThrTrpLysMetSerValArgAspCysAlaTrpLeu	1560 520
-	CGCAGGAGCCCAGGGGTTGGCTGTGTTCCGGCCGCAGAGCACCGTCTGCGTGAGGAGATC ArgArgSerProGlyValGlyCysValProAlaAlaGluHisArgLeuArgGluGluIle	1620 540
	CTGGCCAAGTTCCTGCACTGGCTGATGAGTGTGTACGTCGTCGAGCTGCTCAGGTCTTTC LeuAlaLysPheLeuHisTrpLeuMetSerValTyrValValGluLeuLeuArgSerPhe	1680 560
	TTTTATGTCACGGAGACCACGTTTCAAAAGAACAGGCTCTTTTTCTACCGGAAGAGTGTC PheTyrValThrGluThrThrPheGlnLysAsnArgLeuPhePheTyrArgLysSerVal	1740 580
	TGGAGCAAGTTGCAAAGCATTGGAATCAGACAGCACTTGAAGAGGGTGCAGCTGCGGGAG TrpSerLysLeuGlnSerIleGlyIleArgGlnHisLeuLysArgValGlnLeuArgGlu	1800 600
	CTGTCGGAAGCAGAGGTCAGGCAGCATCGGGAAGCCAGGCCCGCCC	1960 620
	CTCCGCTTCATCCCCAAGCCTGACGGGCTGCGGCCGATTGTGAACATGGACTACGTCGTG LeuArgPheileProLysProAspGlyLeuArgProIleValAsnMerAspTyrValVal	1920 640
: (<u>1</u>	GGAGCCAGAACGTTCCGCAGAGAAAAGAGGGCCGAGCGTCTCACCTCGAGGGTGAAGGCA GlyAlaArgThrPheArgArgGluLysArgAlaGluArgLeuThrSerArgValLysAla	1980 660
\(\begin{align*}	CTGTTCAGCGTGCTCAACTACGAGCGGGGGGGGGGGGGG	2040 680
j	CTGGGCCTGGACGATATCCACAGGGCCTGGCGCACCTTCGTGCTGCGTGTGCGGGCCCAG LeuGlyLeuAspAsplleRisArgAlaTrpArgThrPheValLeuArgValArgAlaGln	2100 700
	GACCCGCCGCCTGAGCTGTACTTTGTCAAGGTGGATGTGACGGGCGCGTACGACACCATC AspProProProGluLeuTyrPheValLysValAspValThrGlyAlaTyrAspThrIle	2160 720
	CCCCAGGACAGGCTCACGGAGGTCATCGCCAGCATCATCAAACCCCAGAACACGTACTGC ProGlnAspArgLeuthrGluVallleAlaSerIleIleLysProGlnAsnThrTyrCys	2220 740
	GTGCGTCGGTATGCCGTGGTCCAGAAGGCCGCCCATGGGCACGTCCGCAAGGCCTTCAAG ValArgArgTyrAlaValValGlnLysAlaAlaHisGlyHisValArgLysAlaPheLys	2280 760
	AGCCACGTCTCTACCTTGACAGACCTCCAGCCGTACATGCGACAGTTCGTGGCTCACCTG SerHisValSerThrLeuThrAspLeuGlnProTyrMetArgGlnPheValAlaHisLeu	2340 780
	CAGGAGACCAGCCCGCTGAGGGATGCCGTCGTCATCGAGCAGAGCTCCTCCCTGAATGAG GlnGluThrSerProLeuArgAspAlaValValIleGluGlnSerSerSerLeuAsnGlu	2400 800
	GCCAGCAGTGGCCTCTTCGACGTCTTCCTACGCTTCATGTGCCACCACGCCGTGCGCATC AlaSerSerGlyLeuPheAspValPheLeuArgPheMetCysHisHisAlaValArgIle	2460 820
	AGGGGCAAGTCCTACGTCCAGTGCCAGGGGATCCCGCAGGGCTCCATCCTCTCCACGCTG ArgGlyLysSerTyrValGlnCysGlnGlyIleProGlnGlySerIleLeuSerThrLeu	2520
	CTCTGCAGCCTGTGCTACGGCGACATGGAGAACAAGCTGTTTGCGGGGATTCGGCGGAC LeuCysSerLeuCysTyrGlyAspMetGluAsnLysLeuPheAlaGlyIleArgArgAsp	840 2580
	GGGCTGCTCCTGCGTTTGGTGGATGATTTCTTGTTGGTGACACCTCACCTCACCCACGCG	860 2640
	FIG 11F	

FIG. 11E

PRINT OF DRAWINGS AS ORIGINALLY FILED

	GlyLeuLeuLeuArgLeuValAspAspPheLeuLeuValThrProHisLeuThrHisAla	88
	AAAACCTTCCTCAGGACCCTGGTCCGAGGTGTCCCTGAGTATGGCTGCGTGGTGAACTTG	270
	LysThrPheLeuArgThrLeuValArgGlyValProGluTyrGlyCysValValAsnLeu	90
	CGGAAGACAGTGGTGAACTTCCCTGTAGAAGACGAGGCCCTGGGTGGCACGGCTTTTGTT	276
	ArgLysThrValValAsnPheProValGluAspGluAlaLeuGlyGlyThrAlaPheVal	92
	CAGATGCCGGCCCACGGCCTATTCCCCTGGTGCGGCCTGCTGCTGGATACCCGGACCCTG	2820
	GlnMetProAlaHisGlyLeuPheProTrpCysGlyLeuLeuAspThrArgThrLeu	940
	GAGGTGCAGAGCGACTACTCCAGCTATGCCCGGACCTCCATCAGAGCCAGTCTCACCTTC	2880
	GluValGlnSerAspTyrSerSerTyrAlaArgThrSerIleArgAlaSerLeuThrPhe	960
	AACCGCGGCTTCAAGGCTGGGAGGAACATGCGTCGCAAACTCTTTGGGGTCTTGCGGCTG	2940
-	AsnArgGlyPheLysAlaGlyArgAsnMerArgArgLysLeuPheGlyValLeuArgLeu	980
	AAGTGTCACAGCCTGTTTCTGGATTTGCAGGTGAACAGCCTCCAGACGGTGTGCACCAAC	3000
	LysCysHisSerLeuPheLeuAspLeuGlnValAsnSerLeuGlnThrValCysThrAsn	1000
	ATCTACAAGATCCTCCTGCTGCAGGCGTACAGGTTTCACGCATGTGTGCTGCAGCTCCCA	3060
	IleTyrLysIleLeuLeuLeuGlnAlaTyrArgPheHisAlaCysValLeuGlnLeuPro	1020
pros.	TTTCATCAGCAAGTTTGGAAGAACCCCACATTTTTCCTGCGCGTCATCTCTGACACGGCC	3120
(<u>)</u>	PheHisGlnGlnValTrpLysAsnProThrPhePheLeuArgValIleSerAspThrAls	1040
I.Ti	TCCCTCTGCTACTCCATCCTGAAAGCCAAGAACGCAGGGATGTCGCTGGGGGCCAAGGGC	3180
O	SerLeuCysTyrSerIleLeuLysAlaLysAsnAlaGlyMetSerLeuGlyAlaLysGly	1060
:¥	GCCGCCGGCCCTCTGCCCTCCGAGGCCGTGCAGTGGCTGTGCCACCAAGCATTCCTGCTC	3240
J	AlaAlaGlyProLeuProSerGluAlaValGlnTrpLeuCysHisGlnAlaPheLeuLeu	1080
Ü	AAGCTGACTCGACACCGTGTCACCTACGTGCCACTCCTGGGGTCACTCAGGACAGCCCAG	3300
4 7*1	LysLeuThrArgHisArgValThrTyrValProLeuLeuGlySerLeuArgThrAlaGln	1100
Ш	ACGCAGCTGAGTCGGAAGCTCCCGGGGACGACGCTGACTGCCCTGGAGGCCGCAGCCAAC	3360
j.	ThrGlnLeuSerArgLysLeuProGlyThrThrLeuThrAlaLeuGluAlaAlaAlaAsn	1120
į	CCGGCACTGCCCTCAGACTTCAAGACCATCCTGGAC	3420
	ProAlaLeuProSerAspPheLysThrIleLeuAsp	1132

Truncated protein 3

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FIG. 11H

GOGACACCIAGAATOGACCEACCCCCCAGACCTGTCGGCTGTGGGCACCTT.TCCTGTGTTTTCCCCCAG

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* GATGAGTGTGTACGTGGAGCTGTTGAGGTGTTATGTTAT
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V K D R L T S 7 I A S I I K P Q N T Y C Y R R Y A V Y Q
GAAGGCCCCCCATGGGCACGTCCCCCAAGGCCTTCAAGAGCCACGTCTTTACCTTTGACAGACCTTCCACCCGTACATGCGACAGTTCAGGACTTCACGACACCCACC
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TOTAGAACACGAGGCCTGGGTGGGACTACTTGTTGAGATGCGGGGCGACTACTCCGGTGGGGGGGTGGGGGGACTACTCCAG V S D B A L G G T A 8 V Q N P A N G L 8 P A C G L L D T R T L E V Q S D Y S S
CTATSCCTOCACCTCCATCACACCTCCACCTTCACCTTCACCTTCACCTTCACCTCACCTCCACCTCCACCTCCACCTCCACCTCCACCTCCACCTCCACCTCCACCTCCACCTCACCTCACCTCCACCTCCACCTCCACCTCCACCTCACCTCACCTCCACCTCACCTCACCTCACCTCACCTCCACCTACCTACCTACCTACCACC
THTOCAGGTTGACAGCCTTCAGACGGTGTGCACCAACATCTACAAGATCTTACAGGATTACAGGTTTACAGGATTTTACATCAGCAAGTTTTCATCAGCAAGTTTTCAACCAAGATTTTCATCAGCAAGTTTTCAGTCAG
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FIG. 11L

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FIG. 11M

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G G P P E A P T T S V R S Y L P H T V T D A L R G S G A W G L L L R R V G D D V CONTRACTOR A S G P R R R L G C R R N N S S 7 R R A G V P L G L P A P G A R R R G G S A TOGETHIC TOTAL TOCAL CONCENSION C GACCIONAMENTALOCOTICOCOMOCITAC CATEMOTORICA CONCENCIONE CALCULATION AND CALCULATION CALCULATION CALCULATION CONTRACTORICA CONTRACTO ATELIACIO ALTRIA CONTROLO TOCO CONTROCA CONTROCA CONTROCA CONTROCA CONTROLO COLORD A G L A D L B L A A L V S D L R R R L V S O L A A R L G D S A G L A C R A L A C R A

TGATTTC.TGTTGACACCTCACCTCACCCCACACCCGAAAACCTTCTTCAGGACCTTGGTCGGAGGTGTCCCTGAGTATGGCTGCATGGACCTGGAGACACAGTGGTGAAC

FIG. 11N

...ference protein (ver. 2)

ATGCCGCGCGCTCCCCGCTGCCGAGCCGTGCGCTCCCTGCTGCGCAGCCACTACCGCGAG	60	
MetProArgAlaProArgCysArgAlaValArgSerLeuLeuArgSerHisTyrArgGlu	20	
GTGCTGCCGCTGGCCACGTTCGTGCGGCGCCTGGGGGCCCCAGGGCTGGCGGCTGGTGCAG		
Valleuprolaudiamentali	120	
ValLeuProLeuAlaThrPheValArgArgLeuGlyProGlnGlyTrpArgLeuValGln	40	
CGCGGGGACCCGGCGGTTTCCGCGCGCGCTGGTGGCCCAGTGCCTGGTGTGCGTGC		
ArgGlyAspProAlaAlaPheArgAlaLeuValAlaGlnCysLeuValCysValProTrp	180 60	
3	60	
GACGCACGGCCGCCCCCCGCCGCCCCCTCCTTCCGCCAGGTG		
AspAlaArgProProProAlaAlaProSerPheArgGlnVal		
GGCTTCCCCGGGGTCGGCGTCCGGCTTGGGGTTGAGGGCGGCCGGGGGAAACCAGCGACATGCGGAGAG	CAGCGCAGGCGACTC	:AGGGCGCTTCCCCCGCAG
G L P G V G V R L G L R A A G G N Q R H A E S A S P G S A S G W G • G R P G G T S D M R R A	SAGDS	GRPPRR
PPRGRPAGVEGGRG2PATCGE	AQATQ	GASPAG
	2 K K K L	RALPPQ
TCCTGCCTGAAGGAGCTG 240		
SerCysLeuLysGluLeu 80		
GTGGCCCGAGTGCTGCAGAGGCTGTGCGAGCGCGCGAAGAACGTGCTGGCCTTCGGC	300	
ValAlaArgValLeuGlnArgLeuCysGluArgGlyAlaLysAsnValLeuAlaPheGly	100	
TTCGCGCTGCTGGACGGGGCCCGCGGGGGCCCCCCGGAGGCCTTCACCACCAGCGTGCGC	360	
PheAlaLeuLeuAspGlyAlaArgGlyGlyProProGluAlaPheThrThrSerValArg	120	
· · · · · · · · · · · · · · · · · · ·		
AGCTACCTGCCCAACACGGTGACCGACGCACTGCGGGGGAGCGGGGGGTGGGGGGCTGCTG	420	
SerTyrLeuProAsnThrValThrAspAlaLeuArgGlySerGlyAlaTrpGlyLeuLeu	140	
VIII		
TTGCGCCGCGTGGGCGACGACGTGCTGGTTCACCTGCTGGCACGCTGCGCGCGC	480	
LeuArgArgValGlyAspAspValLeuValHisLeuLeuAlaArgCysAlaLeuPheVal	160	
CTGGTGGCTCCCAGCTGCGCCCTACCAGGTGTGCGGGCGG	540	,
LeuValAlaProSerCysAlaTyrGlnValCysGlyProProLeuTyrGlnLeuGlyAla	180	
		;
GCCACTCAGGCCCGGCCCCGCCACACGCTAGTGGACCCCGGAAGGCGTCTGGGATGCGAA	600	
AlaThrGlnAlaArgProProProHisAlaSerGlyProArgArgArgLeuGlyCysGlu	200	
=		
CGGGCCTGGAACCATAGCGTCAGGGAGGCCGGGGTCCCCCTGGGCTTGCCAGGCCCGGGT	660	
ArgAlaTrpAsnHisSerValArgGluAlaGlyValProLeuGlyLeuProAlaProGly	220	
000100100100100		
GCGAGGAGGCGCGGGGCAGTGCCAGCCGAAGTCTGCCCAAAGAGGCCCAGGCGT	720	
AlaArgArgArgGlyGlySerAlaSerArgSerLeuProLeuProLysArgProArgArg	240	*!
CCCCCTCCCCCC		
GGCGCTGCCCCTGAGCCGGAGCGGACGCCCGTTGGGCAGGGGTCCTGGGCCCACCCGGGC	780	
GlyAlaAlaProGluProGluArgThrProValGlyGlnGlySerTrpAlaHisProGly	260	
ACCA COCOMOCA		
AGGACGCGTGGACCGAGTGACCGTGGTTTCTGTGTGTGTG	840	
ArgThrArgGlyProSerAspArgGlyPheCysValValSerProAlaArgProAlaGlu	280	
C3.2002.00000000000000000000000000000000		
GAAGCCACCTCTTTGGAGGGTGCGCTCTCTGGGCACGCGCCACTCCCATCCGTGGGC	900	
GluAlaThrSerLeuGluGlyAlaLeuSerGlyThrArgHisSerHisProSerValGly	300	
600000000000000000000000000000000000000		
CGCCAGCACGCGGGCCCCCCATCCACATCGCGGCCACCACGTCCCTGGGACACGCCT	960	
ArgGlnHisHisAlaGlyProProSerThrSerArgProProArgProTrpAspThrPro	320	
TOMOGRAPH		
TGTCCCCCGGTGTACGCCGAGACCAAGCACTTCCTCTACTCCTCAGGCGACAAGGAGCAG	1020	
CysProProValTyrAlaGluThrLysHisPheLeuTyrSerSerGlyAspLysGluGln	340	
CTCCCCCCCC		
CTGCGGCCCTCCTTCCTACTCAGCTCTCTGAGGCCCAGCCTGACTGGCGCTCGGAGGCTC	1080	
LeuArgProSerPheLeuLeuSerSerLeuArgProSerLeuThrGlyAlaArgArgLeu	360	
GTGGAGACCATCTTTCTGGGTTCCAGGCCCTGGATGCCAGGGACTCCCCGCAGGTTGCCC	1140	
ValGluThrIlePheLeuGlySerArgProTrpMetProGlyThrProArgArgLeuPro	380	
CGCCTGCCCCAGCGCTACTGGCAAATGCGGCCCCTGTTTCTGGAGCTGCTTGGGAACCAC	1200	

FIG. 110

As Charlingham I rander		
	<pre>suPheLeuGluLeuLeuGlyAsnHis</pre>	3 4!
	• •	i
GCGCAGTGCCCCTACGGGGTGCTCCTCAAGAC	GCACTGCCCGCTGCGAGCTGCGGTCACC	1260
AlaGlnCysProTyrGlyValLeuLeuLysTh	rHisCysProLeuArgAlaAlaValTh,	420
		420
CCAGCAGCCGGTGTCTGTGCCCGGGAGAAGCC	CCACGGGTTTTGTGGGGGGGGGGGGGGGG	
ProAlaAlaGlyValCysAlaArgGluLysPro	oclacius arus i i i si a sur ci um	1320
	ogingly set agranged ablocking in	440
GAGGACACACACCCCCCCCCCCCCCCCCCCCCCCCCCCC		
GAGGACACAGACCCCCGTCGCCTGGTGCAGCTC	GCTCCGCCAGCACAGCAGCCCCCTGGCAG	1380
GluAspThrAspProArgArgLeuValGlnLe	uLeuArgGlnHisSerSerProTrpGln	460
COCON COCONO COCO		
GTGTACGGCTTCGTGCGGGCCTGCCTGCGCCG	GCTGGTGCCCCCAGGCCTCTGGGGCTCC	1440
ValTyrGlyPheValArgAlaCysLeuArgArg	LeuVal?roProGlyLeuTrpGlySer	480
• • •		
AGGCACAACGAACGCCGCTTCCTCAGGAACACC	LAAGAAGTTCATCTCCCTGGGGAAGCAT	1500
A rgHisAsnGluArgArgPheLeuArgAsnThr	LysLysPheIleSerLeuGlyLysHic	500
· · · · · · · · · · · · · · · · · · ·		300
GCCAAGCTCTCGCTGCAGGAGCTGACGTGGAAG	ATGAGCGTGCGGGGGGCCCCCTTCCCTT	
 AlaLysLeuSerLeuGlnGluLeuThrTrpLys 	:Mer Serilal I was an Company and an	1560
	weeper saryr dyspcAsytal. Lbren	520
CGCAGGAGCCCAGGCGTTCGCTTCTGTTGTTGGGGGG		
CGCAGGAGCCCAGGGGTTGGCTGTGTTCCGGCC	GCAGAGCACCGTCTGCGTGAGGAGATC	1620
ArgArgSerProGlyValGlyCysValProAla	AlaGluHisArgLeuArgGluGluIle	540
CTCCCCA ACTOR	•	
CTGGCCAAGTTCCTGCACTGGCTGATGAGTGTG	TACGTCGTCGAGCTGCTCAGGTCTTTC	1680
LeuAlaLysPheLeuHisTrpLeuMecSerVal	TyrValValGluLeuLeuArgSerPhe	560
		300
TTTTATGTCACGGAGACCACGTTTCAAAAGAAC	AGGCTCTTTTCTACCGGAAGAGTGTC	1740
DheTyrValThrGluThrThrPheGlnLysAsn	ArgLeuPhePheTy=ArgLysSerV=1	580
16	stout not not / targhysservar	580
TGGAGCAAGTTGCAAAGCATTGGAATCAGACAG	C1/mmc11/C1/cccmcc1/cmmc1	
TrpSerLysLeuGlnSerIleGlyIleArgGln	CHC 1 CHACAGGG GGAGGTGCGGGAG	1800
in series and directly real dorn	HistenlysArgValGinLeuArgGlu	600
E CTGTCGC ACCACAGE COMO COMO COMO		
CTGTCGGAAGCAGAGGTCAGGCAGCATCGGGAAG	GCCAGGCCCGCCCTGCTGACGTCCAGA	1960
₩ LeuSerGluAlaGluValArgGlnHisArgGlu	AlaArgProAlaLeuLeuThrSerArg	620
CTCCCCTCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
CTCCGCTTCATCCCCAAGCCTGACGGGCTGCGG	CGATTGTGAACATGGACTACGTCGTG	1920
LeuArgPhelleProLysProAspGlyLeuArgE	ProlleValAsnMetAspTvrValVal	640
#1		
GGAGCCAGAACGTTCCGCAGAGAAAAGAGGGCCC	AGCGTCTCACCTCGAGGGTGAAGGCA	1980
Find GlyAlaArgThrPheArgArgGluLysArgAlaC	luArgleuThrSerlrgValluella	660
<u> </u>	·	900
CTGTTCAGCGTGCTCAACTACGAGCGGGGGGGGGG		
LeuPheSerValLeuAsnTyrGluArgAlaArgA	TERECONDENS TO A CONTRACT OF THE CONTRACT OF T	2040
	agriculyLedLedGIyAlaServal	680
CTGGGCCTGGACGATATCCACACGCCCCCCC	CCTTCCTCCTC	
CTGGGCCTGGACGATATCCACAGGGCCTGGCGCA	CC. CUITGCTTGTGTGCGGGCCCAG	2100
LeuGlyLeuAspAspIleHisArgAlaTrpArgT	nryneValleuArgValArgAlaGln	700
GACCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	•	
GACCCGCCTGAGCTGTACTTTGTCAAGGTGG	ATGTGACGGGGGGGTACGACACCATC	2160
AspProProGluLeuTyrPheValLysValA	spValThrGlyAlaTyrAspThrIle	720
• • •		- -
CCCCAGGACAGGCTCACGGAGGTCATCGCCAGCA	TCATCAAACCCCAGAACACGTACTGC	2220
ProGlnAspArgLeuThrGluValIleAlaSerI	lelleLysProGlnAsnThrTv-Cve	740
		730
GTGCGTCGGTATGCCGTGGTCCAGAAGGCCGCCC	ATGGGCACGTCCGCAACGCCTTCAAC	2222
ValArgArgTyrAlaValValGlnLysAlaAlaH:	ectivations and the state of th	2280
· · · · · · · · · · · · · · · · · · ·		760
AGCCACGTCTCTACCTTGACACACGTCCAGCCTC	CATEGOR OF COMPANY	
AGCCACGTCTCTACCTTGACAGACCTCCAGCCGTX	CALGUST CGTGGCTCACCTG	2340
SerHisValSerThrLeuThrAspLeuGlnProTy	/rmetArgGinPheValAlaHisLeu	780
CAGGAGACGAGGGGGGGGGGGGGGGGGGGGGGGGGGGGG		
CAGGAGACCAGCCGCTGAGGGATGCCGTCAT	CGAGCAGAGCTCCTCCCTGAATGAG	2400
GlnGluThrSerProLeuArgAspAlaValValIl	.eGluGlnSerSerSerLeuAsnGlu	800
•		
GCCAGCAGTGGCCTCTTCGACGTCTTCCTACGCTT	CATGTGCCACCACGCCGTGCGCatc	2460
AlaSerSerGlyLeuPheAspValPheLeuArgPh	eMetCysHisHisAlavalavaria	
		820
AGGGGCAAGTCCTACGTCCAGTGCCAGGGGATCCC	GC1GGGCTCC1TCCTTCTTTTTTTTTTTTTTTTTTTTTT	
ArgGlyLysSerTyrValGlnCysGlnGlyIlePr	oclacius anti-t	2520
- 1-1; 1.didincysdindry: tep:	odindlyserileLeuSerThrLeu	840
CTCTGCAGCCTGTGCTACCGGGAAAAAAA	COMOMENTO	
CTCTGCAGCCTGTGCTACGGCGACATGGAGAACAA	GCTGTTTGCGGGGGATTCGGCGGGAC	2580

FIG. 11P

AS ORIGINALLY FILED SLEUPheAlaGlyIleArgArgAsp	8€
GGGCTGCTCCTGCGTTTGGTGGATGATTTCTTGTTGGTGACACCTCACCTCACCCACGCG	2640
GlyLeuLeuArgLeuValAspAspPheLeuLeuValThrProHisLeuThrHisAla	880
AAAACCTTCCTCAGGACCCTGGTCCGAGGTGTCCCTGAGTATGGCTGCGTGGTGAACTTG	2700
LysThrPheLeuArgThrLeuValArgGlyValProGluTyrGlyCysValValAsnLeu	900
CGGAAGACAGTGGTGAACTTCCCTGTAGAAGACGAGGCCCTGGGTGGCACGGCTTTTGTT	2760
ArgLysThrValValAsnPheProValGluAspGluAlaLeuGlyGlyThrAlaPheVal	920
CAGATGCCGGCCCACGGCCTATTCCCCTGGTGCGGCCTGCTGCTGGATACCCGGACCCTG	2820
GlnMetProAlaHisGlyLeuPheProTrpCysGlyLeuLeuAspThrArgThrLeu	940
GAGGTGCAGAGCGACTACTCCAGCTATGCCCGGACCTCCATCAGAGCCAGTCTCACCTTC	
GluValGlnSerAspTyrSerSerTyrAlaArgThrSerIleArgAlaSerLeuThrPhe	2880 960
	300
AACCGCGGCTTCAAGGCTGGGAGGAACATGCGTCGCAAACTCTTTGGGGTCTTGCGGCTG	2940
AsnArgGlyPheLysAlaGlyArgAsnMetArgArgLysLeuPheGlyValLeuArgLeu	980
AAGTGTCACAGCCTGTTTCTGGATTTGCAGGTGAACAGCCTCCAGACGGTGTGCACCAAC	3000
LysCysHisSerLeuPheLeuAspLeuGlnValAsnSerLeuGlnThrValCysThrAsn	1000
ATCTACAAGATCCTCCTGCTGCAGGCGTACAGGTTTCACGCATGTGTGCTGCAGCTCCCA	3060
IleTyrLysIleLeuLeuGlnAlaTyrArgPheHisAlaCysValLeuGlnLeuPro	1020
TTTCATCAGCAAGTTTGGAAGAACCCCACATTTTTCCTGCGCGCGTCATCTCTGACACGGCC	3120
PheHisGlnGlnValTrpLysAsnProThrPhePheLeuArgValIleSerAspThrAls	1040
TCCCTCTGCTACTCCATCCTGAAAGCCAAGAACGCAGGGATGTCGCTGGGGGCCAAGGGC	3180
SerLeuCysTyrSerIleLeuLysAlaLysAsnAlaGlyMecSerLeuGlyAlaLysGly	1060
## GCCGCCGGCCCTCTGCCCTCCGAGGCCGTGCAGTGGCTGTGCCACCAAGCATTCCTGCTC	3240
्रि AlaAlaGlyProLeuProSerGluAlaValGlnTrpLeuCysHisGlnAlaPheLeuLeu	1080
AAGCTGACTCGACACGGTGTCACCTACGTGCCACTCCTGGGGTCACTCAGGACAGCCCAG	3300
LysLeuThrArgHisArgValThrTyrValProLeuLeuGlySerLeuArgThrAlaGln	1100
ACGCAGCTGAGTCGGAAGCTCCCGGGGACGACGCTGACTGCCCTGGAGGCCGCAGCCAAC	
ThrGlnLeuSerArgLysLeuProGlyThrThrLeuThrAlaLeuGluAlaAlaAlaAsn	3360
	1120
CCGGCACTGCCCTCAGACTTCAAGACCATCCTGGAC	3420
ProAlaLeuProSerAspPheLysThrIleLeuAsp	1132

A L G P Q G N R L V Q R G D P A A F R A L V A Q C L V C V P N D A R P P P A A GOCTOCCOSSIONOSCITCOSCITUMOSCI PSPRQVSCLKSLVAR7LQALCBRGAKHVLAPGPALLDGAR G G P P B A P T T S V R S Y L P M T V T D A L R G S G A W G L L L R R V G D D V TOUTH CHARGE TO THE PARTARE AT S. L. S. G. A. L. S. G. T. R. H. S. H. P. S. V. G. R. Q. H. H. A. G. P. P. STERPSUTGAR RUNGET SCARE UN ETT FE DESERVEN NE POTERRE RELEGIE POR RELEGIE VER DE VER DE LE RELEGIE POR RELEGIE PO MARCOCCOCONACTOR DATA OF THE COLUMN AND THE COLUMN COMPANDA DE LA CONTROL DE LA C CONCRETED TO THE CONTRACTOR ASSOCIATION OF THE SERVICE ASSOCIATION OF THE S GACOTOCANGA TOA GOLOTOCO TOCOTOCO TOCOTOCO COMPACTO CONTROL TOCOTOCA CONTROL TOCOTOCO CONTROL TOCATOCO CONTR COSCITIC SCIENTISTICA CATOSACTA COTTESTO SUSCICACIACONITET SCIENCIA CONTICTO ACCORDINATION ACCORDINA CANCECTOCIONACIONE TECNOLOGICA CONTENTIA CALCACTE CANCELLA CONTENTIA CONTENT TOCCUTCH TECHNOLOGICAL CONTROL TO THE A S S S L F D V ? L R F M C H H A V R L R G K S Y V Q C

 ${\tt TOCCACAGGGTGCCCCTCCTCCCATCTGGGGCTGAGGACAAATSCATCT.TTCTGTGGGGTGAGGGGTGCCTCACAACGGGGAGGAGTTTTCTGGTGCTAATTTTGGTAA.}$

FIG. 11R

CONSERVACIONE CONTROL DE LA CONTROL DE LA CONTROL DE LA CONTROL DE GOLL P G V G V R L G L R A A S G N Q R R A E S S A G D S G R F P R R A S P G S A S G M G * G R P G G T S D N R R R A A Q A T Q G A S P A G P P P R Q P P R G G R P A G V E G S R G R P A T C G E Q R R R L R A L P P P Q V CONTROL TO CONTROL TO LA CALACTA TO CONTROL TO CALACTA TO CONTROL CONTROL CONTROL TO CON CONSCICUENCE CONTRACTOR CONTRACTO GETEST TEXT TEXT TO THE CONTROL OF THE TOTAL CONTROL OF THE TEXT TEXT TO THE CONTROL OF THE CONT SECURIOR DE CONTRA DE CONTRA DE CONTRACTOR D CONTRACTOR OF THE CONTRACTOR O CONCOCCOSCINATORIO CONTROLO CO TOCCOTICS TEAT COLOCACION TO TOCOT COLO TOLA TOLACO COLOCACIONO COLOCACO CO

FIG. 11S

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A L V A Q C L V C V P W D A R P P I

TOTAL TRANSPORTED TO THE PROPERTY OF THE PROPE G G P P E A P T T S V R S Y L P N T V T D A L R G S G A W G L L L R R V G D D CONTRACTOR TO CACAL FV L V A P S C A Y Q V C G P P L Y Q L G A A T Q A R P P P TOUTH CHARGE TO CONTROL OF THE PROPERTY OF THE CONSCISSION TO THE POST OF THE STATE OF THE CACCITICADAGATELACIOTECCOLACISCOCTICOCTICOCACIONOCTICOCACIONOCTICOCACIONOCTICOCACIONOCTICOCACIONACTICO CONCENCIONATION CATEGORIA CONTROL CONT TCTCAAG CEAGGGATTCCSCACGGCTCCATCCTCCTCCACCCTGCTTTSCACCCTCTACTACSACCTACTACACACCTGTTTCCACGGCAATTCCACGGCAATTCCACGGCTACTTCCACGGCTACTGCGTTTCACGGCTACTGCGTTTCACGGCAATTCCACGGCTACTTCCACGGCTACTGCGTTTCACGGCTACTGCGTTTCACGGCAATTCCACGGCAATTCCACGGCAATTCCACGGCTACTGCGGTTTCACGGCAATTCACGGCAATTCCACGGCAATTCCACGGCAATTCCACGGCAATTCCACGGCAATT PTPPLRVISDTA START resocrationer and resocration of the second second

FIG. 11T

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FIG. 11U

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CONCECTIONSCECCE ASSESSES CONTROL OF CONTROL THE CONTROL OF THE CO GLPGVGVRIGLRAAGGNQREAESSAGDSGRPPRR ASPGSASGNG GAPGTSDNRRAAQATQGASPAC PPRGRRPAGVEGIZIEPATCGEQRRRLRALPPQ TOTAL THE STATE OF CONSCICULAR ASSOCIATION CLASSIFICACION CANDIDADA CONTROLO CONTRACTOR OCCUPANTACION CONTRACTOR CONTRACT TOST TECNTOSIOSTONICACESCOCICAMONACCIOCETC. TIGONICACIOCICCOCICACICACTICONICOCICCOCCACCIACTICOSTOSICCOCCACCIACTICOSTOSICCOCCACCIACTICOSTOSICCOCCACCIACTICOSTOSICCOCCACCIACTICOSTOSICCOCCACCIACTICOSTOSICCOCCACCIACTICOSTOSICCOCCACCIACTICOSTOSICCOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCCACCIACTICOSTOSICOCACCIACTICOCAC ATTEMENTATIONS CONCENTRATION OF P P V Y A R T K R P L Y S S G D K B O L R P S P L L S CONCOCCACION DE CONTRACTOR DE CONCRECEDENTITICAL CATORACTACTIC TOCOLOGIC MALACTITET SCANDIAL MACROCITET CACCOTT CACC CONCENSION OF THE CONTRACT OF TOTOMO

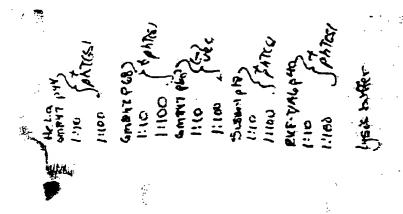
TOCCACAGGGTGCCCCTCSTCCCATCTGGGCCTGAGCACAATGCATCTTTTTTTTGGGAGTACGTCCCACAGCAGCAGCAGTTTTCTGGCTATTTTGGTAAL

FIG. 11V

(<u>)</u>

13 1U

FIG. 11W



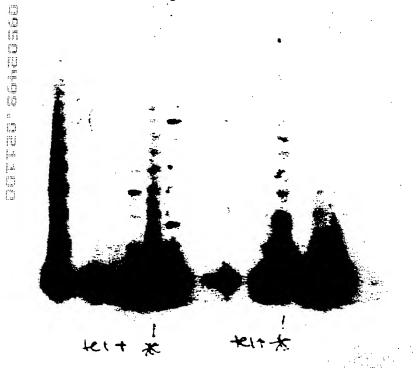


FIG. 12

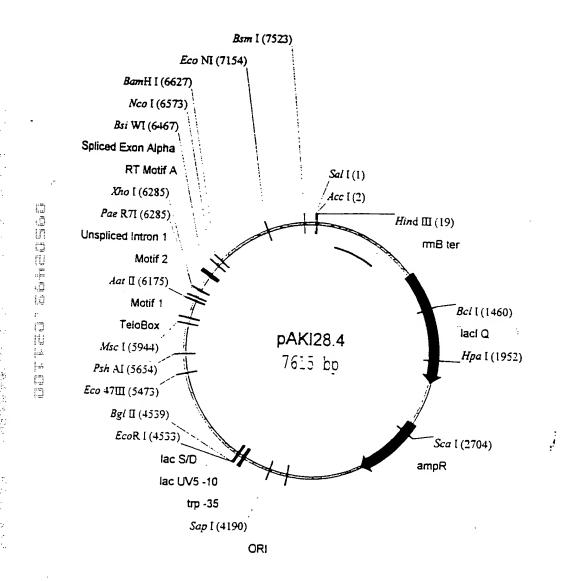


FIG. 13A

LOCUS PARI28.4 7615 bp dsDMA Circular DEFINITION Human telomerase clone with exon beta spliced out

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841 gtetgetece ggeateeget tacagacaag etgtgaeegt etcegggage tgeatgtgte
  901 agaggttttc accgtcatca ccgaaacgcg cgagacgaaa gggcctcgtg atacgcctat
  961 tittataggt taatgtcatg ataataatgg titcttagac gtgaggttct gtacccgaca
 1021 ccatcgaatg gtgcaaaacc tttcgcggta tggcatgata gcgcccggaa gagagtcaat
 1081 tcagggtggt gaatgtgaaa ccagtaacgt tatacgatgt cgcagagtat gccggtgtct
 1141 cttatcagac cgtttcccgc gtggtgaacc aggccagcca cgtttctgcg aaaacgcggg
 1201 aaaaagtgga agcggcgatg gcggagctga attacattcc caaccgcgtg gcacaacaac
 1261 tggcgggcaa acagtcgttg ctgattggcg ttgccacctc cagtctggcc ctgcacgcgc
 1321 cgtcgcaaat tgtcgcggcg attaaatctc gcgccgatca actgggtgcc agcgtggtgg
 1381 tgtcgatggt agaacgaagc ggcgtcgaag cctgtaaagc ggcggtgcac aatcttctcg
 1441 cgcaacgcgt cagtgggctg atcattaact atccgctgga tgaccaggat gccattgctg
 1501 tggaagetge etgeactaat gtteeggegt tatttettga tgtetetgae cagacaccea
 1561 toaacagtat tattttetee catgaagacg gtacgegact gggcgtggag catetggteg
 1621 cattgggtca ccagcaaatc gegetgttag egggeceatt aagttetgte teggegegte
 1681 tgcgtctggc tggctggcat aaatatctca ctcgcaatca aattcagccg atagcggaac
 1741 gggaaggcga etggagtgcc atgtccggtt ttcaacaaac catgcaaatg etgaatgagg
 1801 geategatee cacagegate eaggategeea acgateagat ggegetegge geaatgegeg
 1861 ccattacega gteegggetg egegtiggtg eggatatete ggtagtggga tacgacgata
 1921 cogaagacag otcatgttat atcoogcogt taaccaccat caaacaggat tttogcotgo
 1981 tggggcaaac cagcgtggac cgcttgctgc aactctctca gggccaggcg gtgaagggca
2041 atcagetgtt geoogtotea etggtgaaaa gaaaaaccae cetggegeee aataegeaaa
2101 cogestates cogesesting geogratical talangeaget ggcacgacag gittecogae
2161 tggaaagegg geagtgageg caacgeaatt aatgtaagtt ageteactea ttaggeacge
2221 caggetttac actitatget teegacetge aagaacetea egteaggtgg sacttttegg
2281 ggaaatgtgc gcggaacccc tatttgttta tttttctaaa tacattcaaa tatgtatccg
2341 ctcatgagac aataaccctg ataaatgctt caataatatt gaaaaaggaa gagtatgagt
2401 atteadcatt teegtgtege cottattees tittingegg cattetigest teetgtitt
2461 getcacceag aaacgetggt gaaagtaaaa gatgetgaag atcagttggg tgcacgagtg
2521 ggttacateg agaactggat ctcaacageg gtaagateet tgagagtttt egeccegaag
2581 aacgttttoc aatgatgago acttttaaag ttotgotatg tggogoggta ttatocogta
2641 ttgacgoogg goaagagoaa otoggtogoo goatacacta ttotoagaat gaottggttg
2701 agtactoacc agtoacagaa aagcatotta oggatggcat gacagtaaga gaattatgca
2761 gigotgocat aaccatgagt gataacactg oggocaactt acttotgaca acgatoggag
2821 gaccgaagga getaaccget tttttgcaca acatggggga teatgtaact egecttgate
2981 gttgggaacc ggagetgaat gaagetatac caaacgacga gegtgacact acgatgeetg
2941 tagcaatggc aacaacgttg cgcaaactat taactggcga actacttact ctagcttccc
3001 ggcaacaatt aatagactgg atggaggegg ataaagttgc aggaccactt etgegetegg
3061 cccttccggc tggctggttt attgctgata aatctggagc cggtgagcgt gggtctcgcg
3121 gtatcattgc agcactgggg ccagatggta agccctcccg tatcgtagtt atctacacga
3181 eggggagtea ggeaactatg gatgaacgaa atagacagat egetgagata ggtgeeteae
3241 tgattaagca ttggtaactg toagaccaag tttactcata tatactttag attgatttaa
3301 aacttoattt ttaatttaaa aggatttagg tgaagatoot tootgataat otoatgacoa
3361 aaateeetta aegtgagttt tegtteeact gagegteaga eecegtagaa aagateaaag
3421 gatettettg agateetett tttetgegeg taatetgetg ettgeaaaca aaaaaaccae
3481 egetaceage ggtggtttgt tigeoggate aagagetace aactetitt eegaaggtaa
3541 ciggottcag cagagogoag ataccaaata cigtoctict agigtagoog tagitagoo
3601 accaetteaa gaactetgta geaccgeeta catacetege tetgetaate etgttaceag
3661 tggctgctgc cagtggcgat aagttgtgtt ttaccgggtt ggactcaaga cgatagttac
3721 cggataagge geageggteg ggetgaaegg ggggttegtg eacacagete agettggage
3781 gaacgaccta caccgaactg agatacctac agcgtgagca ttgagaaagc gccacgcttc
3841 ccgaagggag aaaggcggac aggtatccgg taagcggcag ggtcggaaca ggagagcgca
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3961 tetgaettga gegtegatti tigtgatget egteaggggg geggagesta tygaaaaaeg
4021 ccagcaacge ggeettitta eggtieeigg cettitgetg geettitget cacatgitet
4081 treetgegtt acceeergat tergragara acceptatrae egecittgag tegageregata
4141 ccgctcgccg cagccgaacg accgagcgca gcgagtcagt gagcgaggaa gcggaagagc
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       4381 aaggegeact eccepteetgg ataatgette tegegeegae atcataaegg teetggeaaa
       4441 tattetgaaa tgagetgttg acaattaate ateggetegt ataatgtgtg gaattgtgag
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       4561 tggcccgagt gctgcagagg ctgtgcgagc gcggcgcgaa gaacgtgctg gccttcggct
       4621 tegegetget ggaeggggee egegggggee eeeeegagge etteaceace agegtgegea
       4681 gctacetgce caacacggtg accgacgcac tgcgggggag cggggcgtgg gggctgctgc
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     7201 cagcaagtit ggaagaacco cacattitic otgogogica tototgacac ggootoocto
     7261 tgctactoca tootgaaago caagaacgoa googaagaaa acatttotgt ogtgactoot
     7321 gcggtgcttg ggtcgggaca gccagagatg gagccacccc gcagaccgtc gggtgtgggc
     7381 agettteegg tgteteetgg gagggagtt gggetgggee tgtgaeteet cageetetgt.
     7441 titteccedag ggatgteget gggggesaag ggegeegeeg geeetetgee eteegaggee
     7501 gtgcagtggc tgtgccacca agcatteetg etcaagetga etcgacaceg tgtcacctae
     7561 gtgccactcc tggggtcact caggacaggc aagtgtgggt ggaggccagt gcggg
D:\Vector NTI\pAKI28.4.gb
```

FIG. 13D

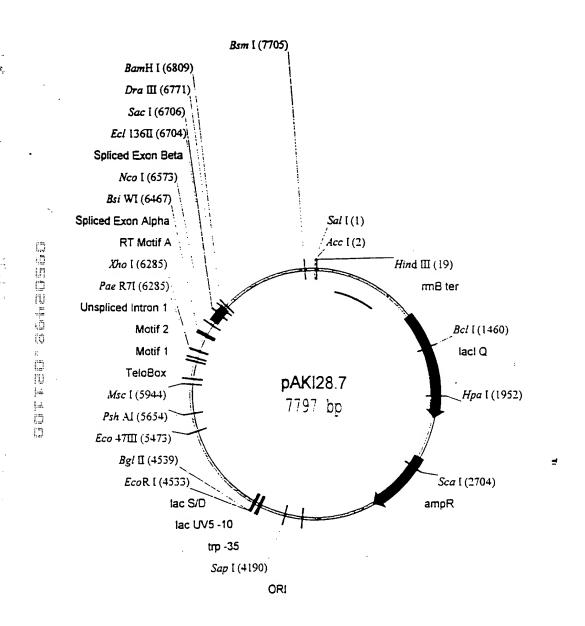


FIG. 14A

LOCUS pARI28.7 7797 bp dsDNA Circular DEFINITION Human telemerase clone with alternative C-terminus

```
1 tegacetgea ggeatgeaag ettggeaetg geegtegttt taeaaegteg tgactgggaa 61 aaceetggeg ttaeceaaet taategeett geageaeate eeetttege eagetggegt 121 aatagegaag aggeeegeae egategeett teeeaaeagt tgegeageet gaatggegaa 181 tggegeetga tgeggtattt teteettaeg eatetggtgg gtatteeae eegeaagea agaagattt eageetggtg gaatteeae eageatgaag 181 teeetgttt ggeggatga agaagattt eageetgata eagaataaat eagaaegeag 181 aageeggae teagaagtga aaegeegtag eggeagtgg geggtggtee eacetgaeee 181 eatgeegaae teagaagtga aaegeegtag eggegatggt aggtggggt eteeeeatge 182 gaagataggg aaetgeeagg eateaaataa aaegaaagge teagtegaaa gaetgggeet 182 teegtttat etgttttg teggtgaaeg eteeeetgg tagacaaat eeggeeggag
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••

```
541 eggatttgaa egttgegaag caacqgeeeg gagggtggeg ggeaggaege eegeeataaa
   601 ctgccaggca tcaaattaag cagaaggcca tcctgacgga tggccttttt gcgtttctac
   661 aaactettee tgtegteata tetacaagee atcececcae agataeggta aactageete
   721 gtttttgcat caggaaagca gggaatttat ggtgcactet cagtacaate tgctctgatg
781 ccgcatagtt aagccagece cgacaceege caacaceege tgacgegeee tgacgggett
   841 gtctgctccc ggcatccgct tacagacaag ctgtgaccgt ctccgggagc tgcatgtgtc
   901 agaggttttc accgtcatca ccgaaacgcg cgagacgaaa gggcctcgtg atacgcctat
   961 ttttataggt taatgtcatg ataataatgg tttcttagac gtgaggttct gtacccgaca
  1021 ccatcgaatg gtgcaaaacc tttcgcggta tggcatgata gcgcccggaa gagagtcaat
  1081 tcagggtggt gaatgtgaaa ccagtaacgt tatacgatgt cgcagagtat gccggtgtct
  1141 ettatoagac egttteeege gtggtgaace aggecageea egtttetgeg aaaacgeggg
  1201 aaaaagtgga agcggcgatg gcggagctga attacattcc caaccgcgtg gcacaacaac
  1261 tggcgggcaa acagtcgttg ctgattggcg ttgccacctc cagtctggcc ctgcacgcgc
  1321 cgtcgcaaat tgtcgcggcg attaaatete gcgccgatca actgggtgcc agcgtggtgg
  1381 tgtcgatggt agaacgaagc ggcgtcgaag cctgtaaagc ggcggtgcac aatcttctcg
  1441 cgcaacgcgt cagtgggctg atcattaact atccgctgga tgaccaggat gccattgctg
 1501 tggaagetge etgeactaat gtteeggegt tatttettga tgtetetgae cagacacca
 1561 toaacagtat tattttotoo catgaagacg gtacgcgact gggcgtggag catctggtcg
 1621 cattgggtca ccagcaaatc gcgctgttag cgggcccatt aagttctgtc tcggcgcgtc
 1681 tgcgtctggc tggctggcat aaatatotca ctcgcaatca aattcagcog atagcggaac
 1741 gggaaggega etggagtgee atgteeggtt tteaacaaac catgcaaatg etgaatgagg
 1801 gcategetee caetgegatg etggttgeea acgateagat ggegetggge gcaatgegeg
 1861 ccattacoga gtccgggctg cgcgttggtg cggatatotc ggtagtggga tacgacgata
 1921 cogaagacag otcatgitat atcongongt taaccaccat caaacaggat trongcongo
 1981 tggggcaaac cagcgtggac cgcttgctgc aactetetea gggccaggeg gtgaagggca
 2041 atcagetgtt geoogtetea etggtgaaaa gaaaaaccae eetggegeee aataegeaaa
 2101 cogestere cogegoguit geogatical taatgeaget ggcacgacag guttecogae
 2161 tggaaagegg geagtgageg caacgeaatt aatgtaagtt ageteactea ttaggeacee
 2221 caggotttac actitatgot teegacetge aagaacetea egteaggtgg cacttteegg
 2281 ggaaatgtgc gcggaacccc tatttgttta tttttctaaa tacattcaaa tatgtatccg
 2341 ctcatgagac aataaccctg ataaatgett caataatatt gaaaaaggaa gagtatgagt
 2401 attrageatt teegtgtege cottattee tittingegg cattitigeet teetgtttt
 2461 gctcacccag aaacgctggt gaaagtaaaa gatgctgaag atcagttggg tgcacgagtg
 2521 ggttacatog agaactggat ctcaacageg gtaagateet tgagagtttt egecoogaag
2581 aacgttttoc aatgatgage acttttaaag ttotgctatg tggcgcggta ttatcccgta
2641 tagacgoogg goaagagoaa otoggaagoo goatacacta tactoagaat gactaggaag
2701 agtacteace agteacagaa aageatetta eggatggeat gacagtaaga gaattatgea
2761 gtgctgccat aaccatgagt gataacactg eggccaactt acttetgaca acgateggag
2821 gaccgaagga getaaceget tittigeaca acatggggga teatgtaaet egeettgate
2881 gttgggaacc ggagctgaat gaagccatac caaacgacga gcgtgacacc acgatgcctg
2941 tagcaatggc aacaacgttg cgcaaactat taactggcga actacttact ctagcttccc
3001 ggcaacaatt aatagactgg atggaggcgg ataaagttgc aggaccactt ctgcgctcgg
3061 cccttccggc tggctggttt attgctgata aatctggagc cggtgagcgt gggtctcgcg
3121 gtatoattgo agcactgggg coagatggta agccotcocg tatogtagtt atotacacga
3181 cggggagtca ggcaactatg gatgaacgaa atagacagat cgctgagata ggtgcctcac
3241 tgattaagca ttggtaactg tcagaccaag tttactcata tatactttag attgatttaa
3301 aacttoattt ttaatttaaa aggatotagg tgaagatoot tettgataat otoatgacca
3361 aaatoootta acgtgagttt togitooaot gagcgtoaga cooogtagaa aagatcaaag
3421 gatettettg agateettt titetgegeg taatetgetg ettgeaaaca aaaaaceac
3481 cgctaccage ggtggtttgt ttgccggate aagagctace aactetttt cegaaggtaa
3541 ctggctcag cagagogoag ataccaaata ctgtccttct agtgtagoog tagttaggoo
3601 accaetteaa gaactetgta geacegeeta catacetege tetgetaate etgetaecag
3661 tggctgctgc cagtggcgat aagttgtgtt ttaccgggtt ggactcaaga cgatagttac
3721 oggataagge geageggteg ggetgaaegg ggggttegtg cacacagees agettggage
3781 gaacgaccta caccgaactg agatacctac agcgtgagea ttgagaaage gccacgctte
3841 ccgaagggag aaaggcggac aggtatccgg taagcggcag ggtcggaaca ggagagcgca
3901 cgagggagot tocaggggga aacgootggt atotttatag tootgtoggg tttogcoaco
```

```
3961 tetgaettga gegtegattt ttgtgatget egteaggggg geggageeta tggaaaaacg
 4021 ccagcaacge ggeettttta eggtteetgg cettttgctg geettttget cacatgttet
 4081 tteetgegtt atcccctgat tetgtggata accgtattac egeetttgag tgagetgata
 4141 ccgctcgccg cagccgaacg accgagcgca gcgagtcagt gagcgaggaa gcggaagagc
 4201 geocaatacg caaacegeet eteccegege gttggeegat teattaatge agaattaatt
 4261 ctcatgtttg acagcttatc atcgactgca cggtgcacca atgcttctgg cgtcaggcag
 4321 ccarcggaag etgtggtatg getgtgcagg tegtaaatca etgcataatt egtgtegete
 4381 aaggegeact ecceptretgg ataatgttt ttgegeegae ateataacgg ttetggeaaa
 4441 tattetgaaa tgagetgttg acaattaate ateggetegt ataatgtgtg gaattgtgag
 4501 cggataacaa tttcacacag gaaacagcga tgaattcaga tctcaccatg aaggagctgg
 4561 tggcccgagt gctgcagagg ctgtgcgagc gcggcgcgaa gaacgtgctg gccttcggct
 4621 tegegetget ggaeggggee egegggggee ceecegagge etteaceace agegtgegea
 4681 getacetgee caacaeggtg accgaegeae tgegggggag eggggegtgg gggetgetge
 4741 tgcgccgcgt gggcgacgac gtgctggttc acctgctggc acgctgcgcg ctctttgtgc
 4801 tggtggctcc cagctgcgcc taccaggtgt gcgggccgcc gctgtaccag ctcggcgctg
 4861 ccactcagge ceggeocecg ccacaegeta gtggaceceg aaggegtetg ggatgegaac
4921 gggcctggaa ccatagcgtc agggaggccg gggtccccct gggcctgcca gccccgggtg
4981 cgaggaggcg cgggggcagt gccagccgaa gtctgccgtt gcccaagagg cccaggcgtg
5041 gegetgeece tgageeggag eggaegeeeg ttgggeaggg gteetgggee caccegggea
5101 ggacgogtgg accgagtgac ogtggtttot gtgtggtgtc acctgccaga coogcogaag 5161 aagccacctc tttggagggt gegettottg geacgegeca etcceaccca teegtggges
5221 gecageacca egegggeecc coatceacat egeggeeacc aegteectgg gacaegeett
5291 gtcccccggt gtacgccgag accaagcact toototactc ctcaggcgac aaggagcagc
5341 tgeggeette ettestacte agetetetja ggeseagest gaetggeget eggaggeteg
5401 tggagaccat cottotgggt tocaggooot ggatgcoagg gactcoocgc aggttgcocc
5461 geotgeocca gegetactgg caaatgegge contintet ggagetgett gggaaccaeg
5521 egeagigece etaeggggig eteeteaaga egeacigece geigegaget geggieaece
5581 cagcageegg tgtetgtgee egggagaage ceeagggete tgtggeggee eeegaggagg
5641 aggacacaga eccepguage engginage injencegoea geacageage eccinggeagg
5701 tgtacggctt cgtgcgggcc tgcctgcgcc ggctggtgcc cccaggcctc tggggctcca
5761 ggcacaacga acgccgcttc cicaggaaca ccaagaagtt catctccctg gggaagcatg
5821 ccaagetete getgeaggag etgaegtgga agatgagegt gegggaetge gettggetge
5881 gcaggagece aggggttgge tgtgttergg cegeagagea cegtetgegt gaggagatee
5941 tggccaagtt cotgcactgg ctgatgagtg tgtacgtcgt cgagctgctc aggtctttct
6001 titatgicae ggagaccaeg titicaaaaga acaggetett titetaeegg aagagtgtet
6061 ggagcaagtt gcaaagcatt ggaattagat agcacttgaa gagggtgcag ctgcgggagc
6121 tgtcggaage agaggtcagg cagcatcggg aagccaggcc cgccctgctg acgtccagac
6181 teogetteat ecceaagest gaoggette ggeogattet gaacategae tacgtegteg
6241 gagccagaac gttccgcaga gaaaagaggg ccgagcgtct cacctcgagg gtgaaggcac
6301 tgttcagcgt getcaactac gagegggege ggegeeeegg ceteetggge geetetgtge
6361 tgggcctgga cgatatccac agggcctggc gcaccttcgt gctgcgtgtg cgggcccagg
6421 accognogen tragetrae trustmaags tragetrae granderate ganachates
6481 cocaggadag gotcacggag gotatogoda goatcatcaa accocagaad acgtactgcg
6541 tgcgtcggta tgccgtggtc cagaaggccg cccatgggca cgtccgcaag gcctccaaga 6601 gccacgtctc taccttgaca gacttccagc cgtacatgcg acagttcgtg gctcacctgc
6661 aggagaccag eccgetgagg gatgeogteg teategagea gageteetee etgaatgagg
6721 ccagcagtgg cotottogac grottostac gottoatgtg ccaccaegec gtgcgcatca
6781 ggggcaagto ctacgtocag tgccagggga tcccgcaggg ctccatcctc tccacgctgc
6841 tetgeageet gtgetaegge gaeatggaga acaagetgtt tgegggggatt eggeggggaeg
6961 aaacttooto aggacotggt oogaagtgto otgagtatgg otgogtggtg aacttgogga
7021 agacagtggt gaacttooot gtagaagacg aagcootggg tggcacggot tttgttcaga
7081 tgeeggeeca eggeetatte ecetggtgeg geetgetget ggataceegg accetggagg
7141 tgcagagega ctactecage tatgecegga cotecateag agecagtete acetteaace
7201 geggeticaa ggetgggagg aacatgegic gcaaactett tggggtettg eggetgaagt
7261 gtcacagcot gtttctggat ttgcaggtga acagcotcca gacggtgtgc accaacatot
7321 acaagatoot cotgotgoag gogtacaggt ttoacgoatg tgtgctgoag etoccattto
```

FIG. 14D

```
7381 atcagcaagt ttggaagaac cccacattt tcctgcgcgt catctctgac acggcctccc 7441 tctgctactc catcctgaaa gccaagaacg cagccgaaga aaacatttct gtcgtgactc 7501 ctgcggtgct tgggtcgga cagccagaga tggagccacc ccgcagaccg tcgggtgtgg 7561 gcagcttcc ggtgtctcct ggggagggag ttgggctggg cctgtgactc ctcagcctct 7621 gtttccccc agggatgtcg ctggggcca agggcgcgc cggccctctg ccctcgagg 7681 ccgtgcagtg gctgtgccac cctggggtca ctcaggacag gcaagtgtgg gtgcagcca gtgcggg
```

FIG. 14E

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FIG. 15A

LOCUS

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[1]

150

pAKI28.14 7688 bp dsDNA Circular

Human telomerase clone with exon alpha spliced out DEFINITION

```
1 togacotgoa ggoatgoaag ottggoactg googtogttt tacaacgtog tgactgggaa
   61 aaccetggcg tracecaact taategeett geageacate eccetttege eagetggcgt
  121 aatagcgaag aggcccgcac cgatcgccct tcccaacagt tgcgcagcct gaatggcgaa
  181 tggcgcctga tgcggtattt teteettacg catetgtgcg gtatttcaca ccgcataaat
  241 tecetgtttt ggeggatgag agaagatttt cageetgata cagattaaat cagaacgeag
  301 aagcggtctg ataaaacaga atttgcctgg cggcagtagc gcggtggtcc cacctgaccc
  361 catgeegaac teagaagtga aacgeegtag egeegatggt agtgtggggt etececatge
  421 gagagtaggg aactgccagg catcaaataa aacgaaaggc tcagtcgaaa gactgggcct
  481 ttcgttttat ctgttgtttg tcggtgaacg ctctcctgag taggacaaat ccgccgggag
  541 cggatttgaa cgttgcgaag caacggcccg gagggtggcg ggcaggacgc ccgccataaa
  601 etgecaggea teaaattaag eagaaggeea teetgaegga tggeettttt gegtttetae
  661 aaactettee tgtegteata tetacaagee atcecceac agataeggta aactageete
  721 gtttttgcat caggaaagca gggaatttat ggtgcactct cagtacaatc tgctctgatg
  781 cogeatagt: aagccagcoc cgacaccoge cascaccoge tgacgcgccc tgacgggctt
  841 gtotgotoco ggoatoogot tacagacaag ctgtgaccgt ctccgggagc tgcatgtgtc
  901 agaggttttc accgtcatca ccgaaacgcg cgagacgaaa gggcctcgtg atacgcctat
  961 ttttataggt taatgtcatg ataataatgg tttcttagac gtgaggttct gtacccgaca
 1021 ccatcgaatg gtgcaaaacc tttcgcggta tggcatgata gcgcccggaa gagagtcaat
 1081 toagggtggt gaatgigaaa coagtaacgi tatacgatgt cgcagagtat googgtgtot
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 1261 tggcgggcaa acagtegtig oigatiggeg tigccaccio cagtetggeo etgcacgege
 1321 ogtogoaaar tgtogoggog attaaatoto gogocgatoa actgggtgcc agogtggtgg
 1381 tgtogatggt agaacgaago ggogtogaag cotgtaaago ggoggtgcac aacottotog
 1441 egeaacgegt cagtgggetg atcattaact atcegetgga tgaccaggat gecattgetg
 1501 tggaagetge etgeactaat gtteeggegt tatttettga tgtetetgae cagacaceca
1561 tcaacagtat tattttttc catgaagacg stacgcgact gggcgtggag catctggtcg
1621 cattgggtoa ccagcaaato gogotgttag ogggoodatt aagttotgto toggogogto
1681 tgcgtctggc tggctggcat aaatattta stogcaatca aattcagccg atagcggaac
1741 gggaaggega etggagtgee atgteeggtt tteaacaaac catgeaaatg etgaatgagg
1801 geategettee caetgegatg etggttgeea acgateagat ggegetggge geaatgegeg
1861 ccarracoga greegggerg egegriggig eggaratere ggrageggga tacgacgara
1921 cogaagacag otcatgitat atcocgoogt taaccaccat caaacaggat titogootgo
1981 tggggcaaac cagcgtggac cgcttgctgc aactototca gggccaggcg gtgaagggca
2041 attagetget georgistea etggigadaa gaadaaceae eetggegeee aataegeada
2101 cogectotes cogegegity googatical taatgoaget ggoacgacag gittecogae
2161 tggaaagegg geagtgageg caacgeaatt aatgtaagtt ageteactea ttaggeacee
2221 caggetttac actitatget teegacitge aagaacetea egreaggtgg caettitegg
2281 ggaaatgtgc gcggaacccc tatttgttta tttttctaaa tacattcaaa tatgtatccg
2341 ctcatgagac aataaccctg ataaatgctt caataatatt gaaaaaggaa gagtatgagt
2401 atteament teegtgrege contactees teentgegg cantingent teengentit
2461 gctcacccag aaacgctggt gaaagtaaaa gatgctgaag atcagttggg tgcacgagtg
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2701 agtactoacc agtoacagaa aagcatotta oggatggcat gacagtaaga gaattatgca
2761 gtgctgccat aaccatgagt gataacact; cggccaactt acttctgaca acgatcggag
2821 gaccgaagga gctaaccgct tttttgcaca acatggggga tcatgtaact cgccttgatc
2881 gttgggaaco ggagotgaat gaagocatac caaacgacga gcgtgacaco acgatgcotg
2941 tagcaatggc aacaacgttg cgcaaactat taactggcga actacttact ctagcttccc
3001 ggcaacaatt aatagactgg atggaggegg ataaagttgc aggaccaett etgegetegg
3061 coettoogge tggotggttt attgotgata aatotggage cggtgagegt gggtotogeg
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3181 cggggagtta ggcaactatg gatgaacgaa atagacagat cgctgagata ggtgcttac
3241 tgattaagca ttggtaactg tcagaccaag tttactcata tatactttag attgatttaa
3301 aacticatit ttaatitaaa aggatotagg tgaagatoot tittgataat otcatgacca
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```
3361 aaatoootta acgtgagttt tögttecact gagegteaga eeeegtagaa aagateaaag
  3421 gatettettg agateettt tttetgegeg taatetgetg ettgeaaaca aaaaaaccac
  3481 egetaceage ggtggtttgt ttgeeggate aagagetace aactetttt eegaaggtaa
  3541 ctggcttcag cagagogcag ataccaaata ctgtccttct agtgtagccg tagttaggcc
  3601 accaetteaa gaactetgta geaccgeeta catacetege tetgetaate etgttaceag
 3661 tggctgctgc cagtggcgat aagtcgtgtc ttaccgggtt ggactcaaga cgatagttac
 3721 eggataagge geageggteg ggetgaaegg ggggttegtg cacacagece agettggage
 3781 gaacgaccta caccgaactg agatacctac agcgtgagca ttgagaaagc gccacgcttc
 3841 ccgaagggag aaaggcggac aggtatccgg taagcggcag ggtcggaaca ggagagcgca
 3901 cgagggaget tecaggggga aacgeetggt atetttatag teetgteggg tttegeeace
 3961 tetgaettga gegtegattt tigtgaiget egteaggggg geggageeta iggaaaaacg
 4021 ccagcaacge ggeetttta eggtteetgg cettttgetg geettttget cacatgttet
 4081 treergegtt arecectgat tergragata acceptattae egeettrag tragerrata
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 4201 geocaatacg caaacegeet eteceogege gttggeegat teattaatge agaattaatt
 4261 ctcatgtttg acagettate ategactgca eggtgcacca atgettetgg egteaggeag
 4321 ccatcggaag ctgtggtatg gctgtgcagg tcgtaaatca ctgcataatt cgtgtcgctc
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 4621 tegegetget ggaegggges egegggges ecceegagge etteaceace agegtgegea
 4681 gctacotgco caacacggtg accgacgcac tgcgggggag cggggcgtgg gggctgctgc
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5101 ggacgogtgg accgagtgac ogtggtttet gtgtggtgtc acctgccaga cocgcogaag
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5221 gccagcacca cgcgggcccc ccatccacat cgcggccacc acgtccctgg gacacgcctt
5291 gteccoogge gtacgeogag accaageact tectetacte eteaggegae aaggageage
5341 tgcggccctc cttcctacto agottctctga ggcccagcct gactggcgct cggaggctcg
5401 tggagaccat ctttctgggt tocaggeect ggatgccagg gactccccgc aggttgcccc
$461 gootgooda gogotactyg caaatysygo occtytteet ggagotyctt gggaaccacg
5521 egeagtgeee etaeggggig eteeteaga egeaetgeee getgegaget geggteacee
5581 cagcagosgg tgtotgtgco cgggagaago occagggoto tgtggoggoo cccgaggagg
5641 aggacacaga cocceptogo etggtgcago tgetecgoca gcacagoago coetggcagg
5701 tgtacggett cgtgeggget tgeetgeget ggetggtget decaggette tggggeteda
5761 ggcacaacga acgccgcttc ctcaggaaca ccaagaagtt catctccctg gggaagcatg
5821 ccaagetete getgeaggag etgaegtgga agatgagegt gegggaetge gettggetge
5881 gcaggagece aggggttgge tgtgtteegg eegeagagea eegtetgegt gaggagatee
5941 tggccaagtt cetgcactgg ctgatgagtg tgtacgtegt cgagetgete aggtettet
6001 titatgtoac ggagacoacg titoaaaaga acaggetett titetacegg aagagtgtet
6061 ggagcaagtt gcaaagcatt ggaattagac agcacttgaa gagggtgcag ctgcgggagc
6121 tgtcggaagc agaggtsagg cagcateggg aagccagges egecetgetg acgtccagae
6181 tengenteat dechaageet gaoggenge ggonganigt gaacatggad tangtoging
6241 gagccagaac gttccgcaga gaaaagaggg ccgagcgtct cacctcgagg gtgaaggcac
6301 tgttcagcgt gctcaactac gagcggggg ggcgcccgg cctcctgggc gcctctgtgc
6361 tgggcctgga cgatatocac agggcctggc gcaccttcgt gctgcgtgtg cgggcccagg
6421 accognogen tragetran titricaage anagentean gragetrate genageatea
6481 toaaacccag aacacgtact gcgtgcgtcg gtatgccgtg gtccagaagg ccgcccatgg
6541 geacgroupe aaggeettea agageracgt eletacettg acagacetee ageogracat
6601 gcgacagttc gtggctcacc tgcaggagac cagcccgctg agggatgccg tcgtcatcga
6661 gcagagetoc tecetgaatg aggetageag tggeetette gaegtettee taegetteat
6721 gtgccaccac gccgtgcgca tcaggggcaa gtcctacgtc cagtgccagg ggatcccgca
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FIG. 15C